

COMPUTERWORLD

Marriott suit damns AMR role in Confirm

BY MARK HALPER
CW STAFF

ROCKVILLE, Md. — A trail of fraudulent and misleading activity that wound throughout AMR Corp.'s managerial ranks deepened Marriott Corp.'s into continuing to invest in the now-defunct Confirm computerized reservation project, the hotelier claims. In a suit filed recently in state court here, Marriott claimed that AMR and its outsourcing subsidiary, AMR Information Services, Inc., concealed technical problems and misrepresented financial realities related to the Confirm project.

The suit also alleged that both Max Hopper — information systems chief at AMRIS sister company American Airlines — and AMR Corp. Chairman Robert Crandall were involved in the deception.

The Marriott filing portrays the working environment at AMRIS as a "fear-based culture," where employees were

fired for being forthright about development problems and where, at one point, nearly half of the Confirm development team members were looking for new jobs.

Marriott seeks \$64 million in damages in what is shaping up as a classic case of who knew what, when. Marriott alleges that because it had refocused its reservation system efforts on Confirm and away from its own Marsha system, it lost the strategic edge that Marsha had provided.

Continued on page 8

Sun slowed by overloaded plate

SPARCstation 10, multiprocessing delays starting to sap user patience

BY MARYFRAN JOHNSON
CW STAFF

MOUNTAIN VIEW, Calif. — Like a juggler with too many balls in the air, Sun Microsystems, Inc., is scrambling to deal with shipping delays on parts of its new SPARCstation 10 line while navigating a rocky upgrade path to the Solaris 2.0 operating system.

For some members of its user audience, this act is wearing a bit thin.

Adding to the upheaval surrounding Sun's product transition is yet another round of hard-

ware and software set to roll out during the next several weeks. Among those announcements will be a low-end color workstation priced well below \$5,000 and based on the microSPARC chip unveiled last week by Texas Instruments, Inc. (see story page 16).

"Sun has a lot of things to get out the door in a timely fashion," said Laura Conigliaro, an analyst at Prudential Securities, Inc. in New York. "If they do, they can be ahead of the curve as far as the competition is concerned. But that's a very big 'if.'"

Anil Gadre, vice president of

product marketing at Sun Microsystems Computer Corp., the company's workstation unit, blamed the slow deliveries on an unexpectedly strong surge of customer demand for the SPARCstation 10s.

Gadre said that while Sun has already shipped thousands of Model 20s and 30s, the more powerful Model 41 missed its September delivery date and will not ship in volume until December. For users maxed out on power and capacity with the SPARCstation 2s, the 40-MHz Model 41 is a far more attractive machine.

ALL A STATE OF MIND

Tempered hopes best route to CASE

BY KIM S. NASH
CW STAFF

Computer-aided software engineering has been stamped on by bitter us-ers taken in by overblown claims of a cure-all for systems backlogs. Well, it is not a panacea: Witness the mainframe-based CASE tool sets, trumpeted as far back as the mid-1980s, that fell short of expectations. Hence, when many CASE pioneers fell, they hit hard.

Consider what happened to a major Canadian oil company that bought an integrated tool kit from a major vendor three years ago.

The company wanted to rewrite IBM 3090-based programs to run in a client/server environ-

Bloom off the rose

CASE sales growth has slowed but is expected to pick up in 1993

\$1.64	
\$2.06	26%
\$2.43	19%
\$2.79	14%
\$3.50	25%

Source: CASE Association, Inc.

ment anchored by Unix boxes.

Projects dragged on because the tool was "too confining," according to one developer. It forced programmers to build in one structured way, he said, driving the redesign effort "massively over budget and over schedule."

Other CASE tools are more flexible in the methods they will allow. Eventually, Unix-based component tools were brought in to jump-start the project, and the firm will likely wrap tools, the developer said.

But qualified successes do exist behind the negative hyperbole. Several factors — most notably tempered hopes — separate these shops from those that have shelved CASE tools and technology.

Continued on page 20

PRODUCT EVALUATION

Amdahl 5905M

Big iron battle

Evaluators of Amdahl's latest mainframe rate it about average in reliability and performance and better than IBM in capacity and space savings.

See New Product In-Size, page 90

	Amdahl 5905M	IBM PS/9000 Model 900
Reliability	3.5	5
Performance	3.5	4
Installation	3.8	4
Support	4	4
Size/Utilities	4	3.5

Rankings are based on a scale of 1 to 5, where 1 is below expectations and 5 is above expectations.

Laptop thefts spur security efforts

Thieves covet access to host databases, seek corporate information jewels

BY JAMES DALY
CW STAFF

Laptop computers are on the move in a lot of places these days, but not always in the hands of their owners.

As purchases of easily trans-

portable laptop and notebook computers have soared in the past 18 months, so has their theft. And it is not just petty thieves who are to blame.

According to one federal security consultant, John Shey, a nationwide band of computer "hit men" with ties to organized crime are being paid upward of \$10,000 to steal portable computers from Fortune 1,000 executives. Rival executives are believed to be behind the contracts.

"It's not the machines they're after; it's the data inside," said Shey, president of

Shey Technology Group, Inc. in Campbell, Calif.

Laptops also provide a perfect way to steal information from a corporate database because they have all the software needed to dial into the company's mainframes.

Yet many executives treat these treasure troves of corporate data with sloppy nonchalance. In a survey by International Data Corp., only 1% of the respondents said they perceived security as a problem with portables, despite numerous high-profile thefts (see story page 41).

Continued on page 12

The waiting game

The multiprocessor Models 52 and 54 — slated for first-quarter 1993 deliveries — must wait for the Solaris 2.1 release, which can handle the symmetric multiprocessing operations that 2.0 cannot. Solaris 2.1 is expected to ship early next year, but Sun officials have not committed to any dates.

In the meantime, some of Sun's customers are feeling a bit like mushrooms: kept in the dark and dining on doses of vendor fertilizer.

"Nobody's telling me any."

Continued on page 16

INSIDE

OS/2 could benefit from slipping Windows NT availability. Page 4.

Dunkin' Donuts MIS director Dave Bennett restricts a fresh batch of Unix systems to bring processing closer to the storefront. Page 6.

IBM centralizes view of databases, LANs. Page 4.

Lotus looks to give users easier entree into Notes workgroups. Page 14.

Integration Strategies — Cross-platform development a tough row to hoe. Page 101.

EXECUTIVE BRIEFING

October 12, 1992

A COMPREHENSIVE GUIDE TO THIS WEEK'S NEWS

CASE

CASE HAS BEEN STOMPED ON by bitter users taken in by vendors' overblown claims, but at shops with the right mix of caution and inventiveness, CASE can make the grade. *Pages 1, 20*

USERS STILL BELIEVE in the concept of AD/Cycle but have lost faith in IBM's ability to get them there. At a user conference in Chicago last week, non-IBM alternatives were demonstrated. *Page 8*

MUSICAL CHAIRS AMONG product strategy setters in three major CASE companies means users should brace for product and strategy shifts during the next year. *Page 33*

OUTSOURCING

AMR AND ITS OUTSOURCING SUBSIDIARY misled Marriott into continuing to invest in the troubled Con- firm computerized reservation project, according to a Marriott suit, which complains that Marriott has now lost the competitive edge it once held with its own reservation system. *Page 1*

USERS EXPLORE their global network outsourcing options. *Page 65*

SEASONAL BUSINESSES often let costly processing power sit idle for much of the year, but as seed and gardening vendors W. Atlee Burpee discovered, outsourcing could help. *Page 77*

OUTSOURCING WAS AN EASY DECISION for the oil industry's emergency-response organization, Marine Spill Response Corp. *Page 116*

ENTERPRISE NETWORKING

IBM TARGETS THE DISTRIBUTED SYSTEMS management arena with an OS/2 version of SystemView that promises soup-to-nuts LAN systems management, automated software distribution. *Page 4*

BYPASS CARRIERS WASTE NO TIME getting into the long-haul telecommunications business, as MFS Datatrust rolls out a nationwide LAN interconnect service. *Page 15*

CABLETRON POSITIONS SPECTRUM to manage users' combined SNA and LAN backbones and adds SNA support to its hubs. *Page 10*

A LOWER PRICED PRODUCT MAY HELP users who want their mainframes to exchange files with other vendors' systems via the Open Systems Interconnect's F/TAM protocols. *Page 69*

SECURITY

LAPTOPS ARE PORTABLE, powerful — and easily stolen. *Page 7*

FEDERAL RAIDERS SEIZE 16 truckloads of DOS software. *Page 6*

SECURITY FIRM HOPES TO THWART thieves, facilitate recoveries with computer registry. *Page 41*

UNIX

SUN IS IN THE MIDDLE of significant product transitions for both hardware and software, and customers are feeling the heat with shipping delays for new systems. *Page 1*

TANDEN COMPUTERS' ENHANCED INTEGRITY Unix processor will be able to run off-the-shelf Unix System V, Release 4 software. *Page 86*

CLIENT/SERVER

Editor in chief Bill Laberta talks about some of the ecstasy — and agony — of the "lightning" movement. *Page 32*

A pioneer user finds that building client/server systems is a high-risk undertaking that requires an overhaul of the IS department. *Page 118*

Dunkin' Donuts decides to buy 800-plus Sun workstations to fill out its unit client/server architecture. *Page 6*

Having automated its North American truck rental operations, U-Haul turns its attention to open systems and client/server computing at its Phoenix headquarters. *Page 55*

A revamped graphical database supports client/server application development. *Page 37*

SAP users welcome the vendor's client/server direction, even though many have no immediate plans to implement the technology. *Page 77*

WORKGROUPS

An IBM manager drops some hints about the new workgroup repository the company is developing, including one that will be based in part on the existing AIX software development environment. *Page 8*

Users gain an inexpensive alternative to Lotus' Notes client software as Beyond wraps in its sophisticated mail package for Lotus' mail front end. *Page 14*

Lotus is working to get rid of the image that Notes is too expensive. *Page 14*

Lotus shoots for 1,000 Notes customers by year's end and credits its IBM deal with winning its customers. *Page 14*

Texas Instruments and Sun unveil the 50-MHz microSPARC chip, a high-volume, low-cost RISC chip

intended for low-end workstations, portables, laptops and X terminals. *Page 16*

LARGE SYSTEMS

DEC tries to set up future wins by early focus on massively parallel programming. *Page 24*

DEC's long-term storage plans are starting to come together with new product introductions. *Page 84*

Supercomputer maker MasPar offers a new generation system with five times the first generation's performance and cuts prices on older machines to compete with those of high-end workstations. *Page 84*

SYSTEMS INTEGRATION

Challenges with networks, development tools, user interfaces and incompatible databases make it difficult to transplant pilot software projects into the enterprise. Commercial firms are eager to help IS departments, which will spend nearly \$5 billion on software-related integration and development in 1992. *Page 101*

Microsoft has decided it's time to enter the big leagues and is going after a piece of the systems integration market, although some users and analysts are taking a "shame"-attitude. *Page 37*

VRs with high inventories and long-term accounts receivable usually spell trouble. *Page 129*

INDUSTRY DEBATE

Undocumented APIs for Windows raise the question of whether Microsoft should be building fences between its Windows and applications groups, thus building the trust of developers and customers. *Page 37*

The 5th Wave appears on page 138

Sematech's funding has been preserved, but with the charge to be environmentally correct. *Page 137*

A computer industry alliance outlines its federal technology and trade agenda. *Page 137*

Carl Malamud, author of Exploring the Internet, talks about why ANSI should provide wider and cheaper access to its standards and discusses a petition drive he coordinated to help make that happen. *Page 33*



Computerized trading systems, such as airline reservation systems, could see even stiffer rules as revenue competition. *Page 109*

Predicted record revenue for Compaq's third quarter is offset by news of the company's worldwide layoffs. *Page 117*

MANAGEMENT

Commercial users are beginning to realize how dependent they are on software, but few understand how to manage that component. *Page 36*

IS managers at biotech firms have it tough. They have small staffs and low system and data standards, making government reporting a bore. At the root of the problem is that top management is focused on science R&D and capital, not business systems. *Page 115*

Ohio State University is studying the biomechanics of keyboard work to learn about repetitive strain injuries. *Page 118*

IS has it easy compared with other white-collar professionals. *Page 121*

Local-area networking
• Douglas reveals a LAN monitor and so do its own trouble-shooting. *Page 66*

Standard Microsystems unveils a Token Ring chip set and adapter card. *Page 58*

A reorganized Novell messaging division cuts prices and unveils new protocol delivery dates. *Page 15*

Let's CD/Novell lets LAN users share applications from a CD-ROM. *Page 59*

Multimedia
• Multimedia goes handheld. *Page 66*

Web multimedia networks boost the success of matchmaking services? Great Expectations thinks so. *Page 65*

Software development
• James Martin & Co. and Intellinet set a new information engineering workbench incorporating an object-oriented methodology. *Page 93*

Integrating IBM's NT delay could spell doom for IBM. *Page 33*

Central Post issues PC Tools 8.0 will improve its quality image. *Page 66*

NCR introduces its first ap-

plication development tool, called NICE. *Page 93*

Desktop
• IBM signals a PC comeback with impressive new notebooks. *Page 12*

IBM Europe releases its aggressively priced ValueStar line of PCs. *Page 13*

Microsoft's NT delay could spell doom for IBM. *Page 33*

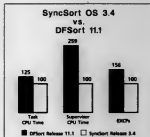
The future is where Compaq's SystemPro/2X line will find its place. *Page 56*

Service/Support
• Proactive Software targets help desks with a piece of integrated system. *Page 58*

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WHOOOSH

**THIS GIVES YOU A ROUGH IDEA
OF HOW FAST SYNCSORT IS.**



SystemView for OS/2 debuts

Will allow management of distributed databases, servers, workstations

BY ELISABETH HOKWITT
CHICAGO

NEW YORK — In a new move to retain customers as they move off mainframes, IBM last week announced a series of distributed systems management products built around a standards-oriented, OS/2-based version of SystemView.

The key introduction, due out between December and late next year, includes DataHub, a platform for managing distributed databases, and LANFocus, a product family that is said to al-

low users to manage and administer local-area network servers and workstations, from a single OS/2 console.

Vendors such as Hewlett-Packard Co. and Sun Microsystems, Inc. are "doing similar things, but not across the board to the degree that IBM is addressing [management of] databases, workstations, servers and LAN devices," said Dick Boyle, a program director at Stamford, Conn., research firm Gartner Group, Inc.

Key attributes of the new platform are SystemView's com-

mon graphical user interface (GUI), object-oriented data structure and standards support, which enable users to administer a wide range of devices without having to worry about the "unique parameter definitions" required to manage each type of system, Boyle said.

SystemView Information Warehouse DataHub, a family of products, is said to enable users to manage heterogeneous databases distributed across all major IBM platforms.

Some users were cautiously optimistic about DataHub.

Soup to nuts for LAN managers

If IBM delivers on the promise of its new OS/2 2.0-based LAN management and software distribution products, life is going to get a lot easier for LAN managers, according to Gartner Group's Dick Boyle. IBM announced LANFocus Management/2, a LAN system management platform with tools for monitoring and troubleshooting LAN systems activities and applications; and Configuration, Installation and Distribution (CID), a family of products for automatically configuring and distributing software to LAN workstations and servers. Both product families will support OS/2 2.0, DOS 5.0 and DOS 5.0 with Microsoft Corp. Windows 3.1 clients, as well as Novell's NetWare.

In addition, LANFocus Management/2 will be able to manage any network device that supports SNMP and CMIP, IBM said. IBM is also developing LANFocus agents for managing IBM Database Manager, Communications Manager and LAN Server. LANFocus promises soup-to-nuts management of LAN systems through a combination of IBM and third-party applications, the vendor said. The platform will be able

to manage IBM Token Ring devices via IBM's LAN Network Manager, IBM said. Other IBM applications will include the following:

- LANFocus Store/2, which is said to provide icon-based screens for managing, planning and validating network system configurations.

- LANFocus Monitor/2 will monitor direct-access storage devices, random-access memory and CPU usage and performance levels.

- LANFocus Pds/2 monitors network hardware and software.

- LANFocus NetView Tie/2 provides a gateway for reporting events to a NetView host.

LANFocus Management/2 1.0, slated for availability in second-quarter 1993, costs \$1,245.

The keystone of IBM's CID offering, Distribution Manager/2 (DM/2) Version 2.0, may be the first product family to enable users to automatically download configuration and software code tailored to different workstations, instead of loading the same cookie-cutter configurations to a group of users in bulk, Boyle said.

DM/2 2.0, set for release by year's end, costs \$1,495 for the server and \$95 per client.

ELISABETH HOKWITT



LANFocus Store/2 lets users track client and server configurations and connections in different windows

"DataHub serves a real need. The issue is when it will extend beyond IBM," said John Chatfield, a senior principal analyst at the Salt River Project in Phoenix.

A number of leading database administration, performance monitoring and capacity planning software vendors have announced plans to support DataHub. They include CompuLink Corp., Legent Corp., Plantem Technology, Inc., Boole & Babbage, Inc. and VM Systems Group.

More support coming IBM spokesman Tom Acer hinted that IBM plans to provide DataHub support for AIX and Novell, Inc. NetWare.

DataHub allows the database administrator to perform functions such as user authorization, table updating, data distribution and backup across heterogeneous databases that comply with IBM's Distributed Relational Database Architecture, Acer said.

DataHub is potentially quite useful to the Federal Reserve

Bank as a way of integrating administration across "a bunch of different databases" now installed at the bank, said an information systems executive at the bank who preferred anonymity.

IBM gained credibility as an open, standards-based vendor with its announcement that SystemView will support the Open Software Foundation's (OSF) Motif GUI, as well as OSF Distributed Management Environment application programming interfaces as they become available. The OS/2 version will also support Simple Network Management Protocol and Common Management Information Protocol, IBM said.

Early shipments of DataHub are scheduled for next spring, with general availability likely late next year, IBM said.

The basic OS/2-based console product is priced at \$2,000; prices for database support modules range from \$200 to \$140,000, based on system size and software tools.

Senior editor Johanna Ambrosio contributed to this report.

IBM may pass Microsoft in operating system race

BY ROSEMARY HAMILTON
and CHRISTOPHER LINDQUIST
CHICAGO

IBM will likely gain a powerful window of opportunity in the next several months as rival Microsoft Corp. moves its delivery schedule for Windows NT Technology (NT) well into 1993.

Analysts and users contacted last week said Microsoft's shift, combined with increased momentum behind OS/2 2.0, could give IBM the lead for the next few years in the high-end desktop operating systems race.

"The million copies IBM has distributed is pretty significant," said Jeff Tarter, publisher of "Softletter" in Watertown, Mass. "IBM already has a pretty strong lead, and NT's delay

could be very bad news for Microsoft."

The delay was summed up by a message from Microsoft in its MSWIN32 forum on CompuServe: "Based on the latest information and our determination to ensure that the final code is of very high quality, the final release of Windows NT will be in early 1993, not end of 1992, as previously anticipated."

Microsoft also confirmed that an end-user beta test scheduled for September has just begun production and will not be in user hands until the end of this month.

The causes of the delay are unclear. Cameron Myrhol, director of developer relations at Microsoft, last week attributed the slips to performance and compatibility improvements.

"You can spend a lot of time squeezing the last bits out."

Developers who have been working with Windows NT for some time said the major parts of the operating system seem to be very stable, but details such as improved DOS and Windows 3.0 and 3.1 compatibility could still be an issue.

No need to worry

Hamilton Laboratories in Wayland, Mass., has been shipping Windows NT development tools for several months, and President Douglas Hamilton said he could point at no glaring bugs. "I don't see any cause to say 'Aha! See, they're run into serious problems,'" he said. "It's taking just a little bit more work than they expected."

While Microsoft is stuck in neutral, IBM is sticking it. It will not be long before it doubles its OS/2 shipments. Shon Seliga, manager of OS/2 at the OS/2 Programming Center in Boca Raton, Fla., said last week: "We

are on our way to 2 million."

The key for IBM is to keep its momentum going, and for the short term that means delivering on its promises for 1992. The company says it is on schedule to deliver an assortment of fixes and additional features that it has been promising since spring. A Service Pack that will include more than 200 bug fixes and the expected 32-bit graphics engine is scheduled to ship mid-way through this month.

The new engine effectively replaces a hybrid engine of 16-bit and 32-bit technology that IBM shipped with OS/2 2.0 earlier this year.

The Service Pack "is absolutely key to us," said George Oliver, manager of information delivery technologies at the Royal Bank of Canada. IBM said it would follow this release with another Service Pack that would not include the new graphics engine for users who want the bug repairs but are not yet ready for the new graphical

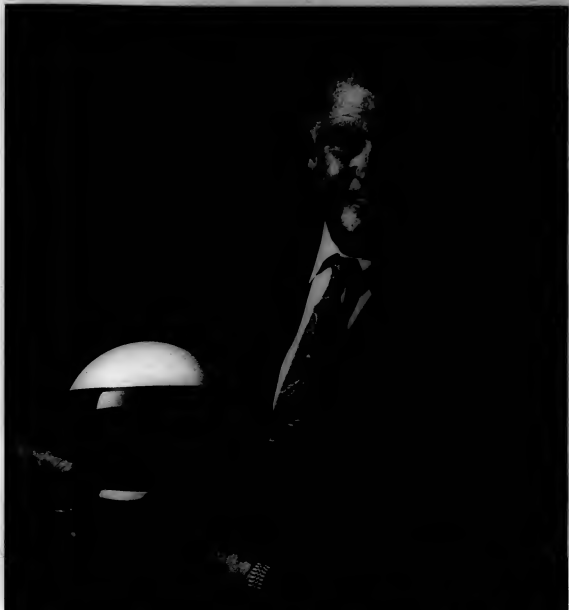
function. Finally, it will ship by year's end a point release of 2.0 that will support Windows 3.1.

Corporate users said the effects of the slip would be minimal, as projects that would use Windows NT are generally long-term in nature.

Keith Dart, a systems analyst at GTE Mobilnet in Pleasanton, Calif., said that while he is interested in NT, he does not need it immediately and would be happy to get on the beta-test program.

Other users may simply have more than enough to do just installing Windows 3.1 without having to deal with testing Windows NT as well.

Theresa Doyle, vice president of computers and information services at Dean Witter, said that while she would like to see if Windows NT will be usable for stock analyst workstations, she is just "so busy" getting current systems installed that the delay "is not going to have any effect in my area."



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NEWS SHORTS

Live video on deck for Notes

Denver, Mass.-based PictureTel Corp. and Lotus Development Corp. said last week they have swapped technology to bring PictureTel's dial-up videoconferencing capabilities to Lotus' Notes workgroup software. Users will reportedly be able to dial up a videoconference through their Notes application. Availability and pricing were not announced.

Ti cranks up 486 production

Texas Instruments, Inc. has started volume production of a line of 486-class microprocessors to be used in notebook and desktop machines, the first of which will appear at Comdex/Fall '92 next month. Prices for the T1496 chips — six models in all — range from \$59 for a 20-MHz 486SLC to \$99 for a 33-MHz 486DLX. That compares with Intel's pricing of \$94 to \$317 for comparable parts.

Cellular data service to debut



Westinghouse Electronic Systems and Bell Atlantic Mobile Systems, Inc. said last week they would launch the nation's largest data-over-cellular service in the Baltimore area in the first quarter of 1993. The partners will use technology from Cellular Data, Inc. in Mountain View, Calif. The plan calls for Bell Atlantic to sell its packet data cellular services to Westinghouse, which will resell cellular data services integrated with software and hardware to end users.

Quattro Pro bugs reported

Borland International, Inc.'s Quattro Pro for Windows has barely shipped, but reports of problems are filtering in. The spreadsheet reportedly requires more system resources than other Microsoft Corp. Windows spreadsheets, requiring users to close other applications just to get Quattro Pro to load. A Borland spokesman would not comment on the package's resource requirements, other than to say that if there is a problem, its technical support staff would take care of it.

Novell concedes security threat

Responding to a recently discovered security threat to its NetWare LAN operating systems, Novell, Inc. is distributing a patch for NetWare 3.11, NetWare 2.2 and NetWare for Unix customers. The fix can be downloaded from the NetWare bulletin board on CompuServe. The security gap, as demonstrated in a Netherlands laboratory, allows any user logged on to a LAN to gain network supervisor status, providing unlimited access to all of the data stored on the server. According to Novell's Jan Neumann, executive vice president of the NetWare Systems Group, the break-in would be confined to one server.

Short takes

Microsoft is set to ship the software development kit for its Open Database Connectivity application programming interface. The kit will allow developers to write a common set of Windows code that will be able to access multiple back-end databases. . . . Microsoft has created a chief information officer position and filled it with Neil Evans, a nine-year employee and general manager of the Information Technology Group. . . . Toshiba America Information Systems, Inc. this week will cut the price of its Satellite T1850C low-end color notebook by roughly 30%, down to as low as \$2,250. . . . Symantec Corp. plans to acquire Certus International Corp., developer of antiviral and security software for personal computers. . . . Computerized Corp. announced a major restructuring last week, splitting the company into two divisions: Franchising and Distribution and the Corporate Division. . . . JWP, Inc.'s president and chief operating officer, David L. Skol, resigned his position and his seat on the board of directors amid continuing losses. Andrew T. Dwyer, chairman and chief executive officer, will take the role of president.

More news shorts on page 16

Donut maker dips into Sun

BY JEAN S. BOZMAN
CW STAFF

MOUNTAIN VIEW, Calif. — Dunkin' Donuts of America, Inc. is expected to reveal this week that it will use Sun Microsystems, Inc. gear to provide networked computing resources to automate 840 of its 2,600 franchise stores in the U.S. Many of the stores had been using IBM-compatible personal computers or paper records to track inventories and support office automation.

Automation has been inconsistent throughout the Dunkin' Donuts enterprise, and vital data about sales and up to 15% of inventory was being lost at some stores. The Sun systems will provide a consistent architecture within the company and allow each office to more easily communicate data to headquarters and one another, said Dunkin' Donuts MIS director Dave Bennett.

The firm's contract with Sun, worth \$8 million over four years, underscores its commitment to Unix client/server architecture as the basis for all its information systems. The chain now uses a 22 million instructions per second Sun Server 490 as the primary computer for 400 employees at its Randolph, Mass., headquarters.

Dunkin' Donuts studied the use of Unix store systems by other restaurant chains, including McDonald's Corp., Pepico, Inc. and Mrs. Fields Cookies, Inc. before deciding on the multiuser Sun platform. "This is our first-generation system, but other chains are on their third-gen-

eration or fourth-generation systems," Bennett said. "It'd be foolish not to try to learn from their experience."

The first batch of distributed Sun workstations will be rolled out to Dunkin' Donuts franchise owners sometime next year.

Each Sun computer will par-



Dunkin' Donuts' Bennett says it is substantially cheaper to run his operations on Sun

ticipate in a peer-to-peer network, rather than as a lowly cog in a top-down, host-based system. That design fits the Dunkin' Donuts organization, which consists of a headquarters staff, a small number of company-owned stores and more than 1,300 franchise operations, Bennett said.

Stores will send their daily transactions to the headquarters' Oracle Corp. Oracle 6 database over a company-wide-area network for analysis by regional market. The central Sun server will be able to download software revisions to the stores. Sun's SPARCstation IPC core workstations will act as local hosts and

clients to the central server at franchise stores.

On board each SPARCstation IPC will be a suite of store management software, including modules for inventory management, sales tracking and distribution, developed by a team of five central-site Dunkin' Donuts programmers. A route management package that tracks distribution to other Dunkin' Donuts outlets and local convenience stores has already been tested by some owners.

The SPARCstations — including the Solaris operating system and custom software — will be sold to the franchisees for less than \$12,000 — the price of three cash registers, Bennett said. He estimated the cost of operating with the Sun systems is roughly one-tenth the cost of running the business on IBM midrange mainframes.

However, several loose ends remain in the Dunkin' Donuts client/server system, including a lack of performance monitoring software for the enterprise. Unix network, due to be supplied under Sun's recent agreement with Computer Associates International, Inc.

Dunkin' Donuts, which has \$1.3 billion in annual software sales in 18 countries, has proven to be a corporate maverick in its move toward an open systems standard. It is just one operating unit of Allied Lyons PLC, a \$9 billion British conglomerate that runs on large-scale IBM mainframes. "They're interested in understanding to what extent open systems makes sense [for them] and in how to deploy it," Bennett explained.

Feds seize counterfeit DOS

BY JAMES DALY
CW STAFF

REDMOND, Wash. — In what was described as the largest seizure of counterfeit software ever, U.S. marshals announced the confiscation of 16 trailer trucks filled with counterfeit Microsoft Corp. DOS software in a series of raids conducted last month throughout Northern California and Nevada.

Law enforcement officials impounded 150,000 bootleg copies of the DOS Version 5.0 operating system in a crackdown that focused on an alleged counterfeiter enterprise called U-Top Printing Corp., based in Sunnyvale, Calif. The pirated software

had a street value of more than \$9 million, Microsoft officials said.

The high-profile raids occurred just prior to congressional action on a bill to strengthen software copyright penalties. The software piracy bill, S. 893, has passed the House of Representatives and was expected to go before the U.S. Senate last week.

If passed, the bill would make software copyright infringement a felony, upping the maximum term of imprisonment to five years with a possible fine of up to \$250,000.

Willful infringement is now subject to a maximum fine of \$25,000 or imprisonment of up

to one year or both.

Microsoft has filed suit in federal court against U-Top and its owners, James and Shirley Sung, for copyright infringement, trademark infringement and related claims. An attorney for the Sungs said they had simply produced DOS copies on behalf of computer makers they believed had valid licenses to manufacture the operating system.

In the past, U-Top had legally produced versions of DOS for Milpitas, Calif.-based Caliber Computer Corp. and MTD Data Services, Inc. in Bellevue, Wash. But Caliber and MTD are no longer licensed to make the program, Microsoft officials said.

The Business Software Alliance estimated that software piracy cost U.S. businesses \$12 billion last year.

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Chairman and CEO
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IBM CASE delays send users elsewhere

BY JOHANNA AMBROSIO
OF STAFF

CHICAGO — Users gathered here last week at the Repository AD/Cycle (RAD) International Users Group conference remain faithful to the church of structured software design but expressed little confidence in the ability of IBM to lead them to the promised land.

"I'm still a great believer in the concept of Repository and AD/Cycle because they will have a dramatic impact on our ability to manage data and exploit information," said Walter Vail, manager of the information systems enabling center at Texaco, Inc. in Houston. "But IBM has no credibility. Who are they to talk about disciplined applications development?"

IBM's Repository Manager, announced in September 1989, was supposed to have acted as an integration mechanism through which computer-aided software engineering (CASE) tools would share information. But Repository Managers never materialized as a usable product, and in July, IBM began briefing customers about a shift in direction: putting a repository on local-area networks (LANs).

Donnette Bruno, president of RAD, said, "People were wait-

ing for IBM, but they're not any more." In fact, she said, the user group is considering changing its name to make it less tied to IBM.

Like many of the other users that met here last week, Texaco is now exploring options other than IBM for a repository, including Infolapse in Minneapolis, Retech Products, Inc. in Fairfax, Va., and BrownStone Solutions, Inc. in New York.

Texaco's loss of faith is significant a bit on a workgroup repository the firm is working on, saying it will be unveiled in pieces throughout next year and 1994, and it will be based on the existing CASE environment for the RISC Systems/6000 family of Unix-based computers.

Also last week, IBM announced an agreement to pitch KnowledgeWare, Inc.'s tools as the cross-life cycle, software development family of choice to customers.

The KnowledgeWare deal is essentially meant to allow IBM to compete with Texas Instruments, Inc. and other providers of integrated CASE solutions, said Cathy J. Lewis, director of applications development marketing at IBM Programming Systems.

Lewis dismissed the notion that the expanded deal with KnowledgeWare will add stress to the AD/Cycle Alliance. Some of the other alliance members have, however, privately registered their displeasure over what they perceive to be KnowledgeWare's elevation.

for integration or looking at alternative repositories," he said. "People don't see IBM delivering, so they're paying attention to others who are."

Cathy J. Lewis, director of applications development marketing at IBM Programming Systems in Somers, N.Y., denied

that IBM's CASE star has been tarnished. "We believe a good number of customers look to us for leadership in applications development," she said.

Ed Peters, chief information officer at The Hay Group in Washington, D.C., and one of the users on the committee who met

during the late 1980s to draw up requirements for AD/Cycle, said there is still a lot that can be accomplished.

"There have been disappointing delays from the prime vendor to make the environment fit together properly," Peters said. "But people can still drive forward... If IBM doesn't have the products, we can't wait because our business will not wait."

Repository pact bugs AD/Cycle allies

Last week, an IBM manager lifted the curtain a bit on a workgroup repository the firm is working on, saying it will be unveiled in pieces throughout next year and 1994, and it will be based on the existing CASE environment for the RISC Systems/6000 family of Unix-based computers.

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The new repository, dubbed AD Platform, will initially provide basic interactive communications, with full-scale data integration coming as soon as possible thereafter," said John Swainson, manager of the systems management technology center at IBM's Tuxedo laboratory. That will allow one tool to pick up a flow chart from another tool, for example.

The new repository will be a "scalable development environment" that can support "multiple clients, multiple servers and hundreds of people," he said. It will run under AIX and OS/2.

Other features include the following:
• The ability to track different versions of software being developed, at the level of both a whole program and individual pieces of data.
• A logical point from which to control everything.

Swainson also said IBM is building the new system on top of the existing AIX CASE framework. This framework, developed with Hewlett-Packard Co., provides an intertool messaging scheme.

Marriott suit damns AMR role in Confirm

CONTINUED FROM PAGE 1

Marriott has operated Marsha since 1984, using reservation centers in Omaha and Salt Lake City, and claimed to have reduced its cost and improved its effectiveness.

An AMRIS spokesman last week declined to comment on the allegations and said that neither Crandall nor Hopper would be available for interviews. Marriott also declined comment.

Marriott's suit was filed three days after Fort Worth, Texas-based AMRIS filed an action in Dallas against Marriott and Confirm's other user partners, Hilton Hotels Corp. and Budget Rent A Car (C/W, Oct. 5).

AMRIS alleged in its suit that the three user partners withheld funds, missed deadlines for submitting design specs and made poor staffing assignments that harmed the Confirm project.

Besides recouping legal fees, AMR and Marriott might also settle on a venue for the legal action. As of late last week, Hilton said it had not filed any motions, and Budget had not returned phone calls inquiring whether it planned

legal recourse.

The AMRIS spokeswoman charged Marriott's Maryland filing as a case of "forum shopping," meaning Marriott had filed in Maryland to move the case out of Dallas and into Marriott's home territory.

Plans gone awry

The four firms had formed a consortium called Intrico to oversee development and marketing. AMRIS was assigned to development, and Marriott, Hilton and Budget were financial partners.

Development efforts ceased last summer. Databases were virtually irretrievable in the event of a crash, and the system's Transaction Processing Facility reservation component did not integrate well with its MVS and DB2-based decision-support component.

Marriott claimed in its suit that officials at AMR and AMRIS knew of technical problems long before admitting to them or to their seriousness last April. It also claimed that AMRIS deliberately falsified financial representations of the project,

The suit named Crandall and Hopper as two of six AMR executives "who played a significant role in the events surrounding AMRIS' defaulting of Marriott and leading up to AMRIS' ultimate breach of its contract."

For instance, the suit alleged that Crandall and Hopper gave "false assurances" to Marriott that deadlines would be met. On one occasion in April 1991, Crandall assured Marriott that a

stripped-down version of Confirm would be complete by June 1992, even though AMRIS had known in February that it could not meet that deadline.

A month after Crandall's assurance, John Mott, a former AMRIS official, told Marriott "the assumptions made in scheduling the [modified version] were 'quite poor,'" the suit alleged.

The suit also alleged that Crandall and Hopper had com-

municated to Marriott last April that they believed AMR employees had concealed information. Hopper had at one point issued an internal AMRIS memo criticizing staff members because they "did not disclose the true status of the project in a timely manner" (C/W, Aug. 10).

Marriott claimed that Crandall wrote to Marriott, Hilton and Budget on April 29 stating: "The individuals to whom we gave responsibility for managing Confirm have proven to be inept. Additionally, they have apparently deliberately concealed a number of important technical and performance problems."

According to Marriott, other AMR executives who defrauded the hotel include former AMRIS President Russell Harrison; Mott, former president of AMRIS Travel Services Division in charge of development; David Harris, a former vice president of AMRIS Travel Services; and Robert Geller, former assistant vice president of AMRIS Travel Services.

The suit claimed that AMR fired Mott, Harris and Geller last April for concealing data.

Mott, who recently joined Electronic Data Systems Corp.'s financial business unit, said last week he left AMRIS voluntarily.

The other managers named in the suit either declined comment or could not be reached.

Too many pilots

Confirm's "fatal flaw" was a faulty management structure in which so many groups had ample authority over the project, according to John Mott, the former president of AMRIS Travel Services Division.

Although Intrico had a permanent president in place, it was governed by a board that consisted of representatives from all four parties who met once a month. "You cannot manage a development effort of this magnitude by getting together once a month," noted Mott, who was named in a suit brought by Marriott regarding the defunct reservation system project.

"Had they allowed the president of Intrico to function as CEO in a normal sense and empowered their senior reps [to] work together with a common goal and objective, it would have worked," he said. Mott further claimed that the partners never empowered Intrico to be anything more than a sales force, adding that each of the groups maintained separate identities.

"A system of this magnitude requires quintessential teamwork," he continued. "We essentially had four different groups... It was a formula for failure."

MARK HALPER

TWO-PHASE COMMIT SYBASE VS. ORACLE7

PROGRAMMATIC AND PROPRIETARY

```

two-phase)
{
  /* open up two servers and a commit service */
  dbproc_server1 = dbopen@dbproc, database@server1;
  dbproc_server2 = dbopen@dbproc, database@server2;
  dbproc_commit = open_commit@dbproc, NULL;
}

/* prepare data for each command buffer and select a database to
   use, then start distributed transaction on commit service */
commit = start_xact@dbproc_commit, application, "rep_xact", 0;

/* build transaction name and begin transactions on different
   servers */
build_xact_string(" ", commit, xact_string);
dbcmd@dbproc_server1, "BEGIN TRANSACTION %s", xact_string;
dbcmd@dbproc_server2, "BEGIN TRANSACTION %s", xact_string;
dbcmd@dbproc_server1, "COMMIT TRANSACTION";
/* perform various updates and then... */
/* if there is a failure on one out of them */
if (return_code != 0)
{
  /* abort_xact@dbproc_commit, commit;
   dbcmd@dbproc_server1, "ROLLBACK TRANSACTION";
   return_code = dbcmd@dbproc_server1;
   dbcmd@dbproc_server2, "ROLLBACK TRANSACTION";
   return_code = dbcmd@dbproc_server2;
   if (return_code != 0)
   {
     /* remove_xact@dbproc_commit, commit, 1;
     }
   }
  abort@dbproc_commit;
}

/* otherwise prepare to commit */
dbcmd@dbproc_server1, "PREPARE TRANSACTION";
dbcmd@dbproc_server2, "PREPARE TRANSACTION";
dbcmd@dbproc_server1, "COMMIT TRANSACTION";
/* as before if anyone fails then abort all, otherwise commit */
if (return_code != 0)
{
  /* abort_xact@dbproc_commit, commit;
   error_function; /* rollback and remove each participant */
}
dbcmd@dbproc_server1, "COMMIT TRANSACTION";
dbcmd@dbproc_server2, "COMMIT TRANSACTION";
my_xact@dbproc_server1;
my_xact@dbproc_server2;
close_commit@dbproc_commit;
close;
}

/* define the subroutine which handles failure */
my_xact@dbproc_server1, dbproc_commit, commit;
DEPROCESS dbproc;
DEPROCESS dbproc_commit;
commit;

return_code = dbcmd@dbproc_server1;
if (return_code != 0)
{
  /* remove_xact@dbproc_commit, commit, 1;
}

return;

```

AUTOMATIC AND STANDARD

```

UPDATE SAVINGS
SET S_BALANCE = S_BALANCE - 250.00
WHERE S_DEPOSITION = JONES
UPDATE
SET C_BALANCE = C_BALANCE + 250.00
WHERE C_DEPOSITION = JONES

COMMIT WORK;

```

Early Client/Server RDBMS products, like Sybase, don't automatically assure the consistency of distributed transactions. When related data on multiple servers must be updated by one transaction, it is up to the applications programmer to write specialized program code to do it. LOTS OF CODE. Complex, unfamiliar, error-prone system control code that has nothing to do with business applications.

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Cabletron tackles LAN/SNA integration

BY ELISABETH HORWITT
CW STAFF

ROCHESTER, N.H. — Cabletron Systems, Inc. last week joined the eager throng of hub, router and communications controller vendors that are hoping to become vehicles for the integration of local-area network and IBM Systems Network Architecture (SNA) traffic.

Cabletron went a step further and also introduced products said to enable users to manage both SNA and Simple Network Management Protocol (SNMP) networking installations via its Spectrum network

management platform.

Scheduled to ship next March, BlueVision consists of a NetView-based application for monitoring SNA devices and mainframe applications with a bidirectional link to Cabletron's Spectrum system. The latter is an SNMP-based system designed to manage a broad range of LAN and interworking devices.

"In the battle between LAN managers and IS managers for management of SNA/LAN installations, we are letting customers choose" whether to manage from the IBM or the LAN side, according to Tim Burkardt, who is Cabletron's director of

IBM connectivity products.

Information systems managers can manage SNA installations through a terminal emulation window into familiar, text-based NetView host applications or from Spectrum's icon-driven, "intuitive" graphical user interface, Burkardt said.

In addition, BlueVision allows managers to view SNA and LAN devices and traffic on the same console, for purposes of troubleshooting and capacity planning. This fits in with another Cabletron announcement last week to provide support for IBM Synchronous Data Link Control devices on its hubs (see story below).

Cabletron was smart enough to get its SNA networking and management capabilities from "companies that know and live by SNA, rather than reinvent the wheel," said Dick Boyle, a program director at Gartner Group, Inc., based in Stamford, Conn.

Old friends

Cabletron got the SNA management side of BlueVision from NetTech, a Raleigh, N.C.-based IBM business partner headed by a former IBM NetView developer, Cabletron said.

Right now, no one else offers the same level of integration between SNA and LAN management, Boyle said. IBM is keeping its SNA management on NetView, "which really doesn't understand SNMP," Boyle added.

Cabletron plans to enhance BlueVision with the ability to manage IBM Token Ring devices via IBM's LAN Network Manager application, Burkardt said. The vendor also plans to add management capabilities for some of the newer SNA products — possibly IBM's Advanced Peer-to-Peer Networking protocol, Burkardt said. BlueVision is tentatively priced at \$14,995 for the core technology, Cabletron said.

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Token of thanks

Users now have their first smart wiring hub alternative for blending IBM SNA and LANs. Last week, Cabletron announced a module for its Multi-Media Access Center (MMAC) that reportedly allows IBM cluster controllers to sit directly on a Token Ring LAN.

Other hub vendors, such as 3Com Corp., are expected to follow suit soon with SNA-to-LAN modules, analysts predicted.

Cabletron's module leverages IBM-oriented vendor Synch Research, Inc.'s Synchronous Data Link Control-to-Logical Link Control (SDLC-to-LLC) conversion technology. SDLC is a bit-oriented protocol within an SNA network; LLC protocols are used in LAN communications.

Some IBM cluster controllers, such as the 3274 and older models of the 3174, cannot be outfitted with Token Ring adapter cards. Companies wishing to bring them into the Token Ring fold must replace them with a minimum Model 3174 G3R, which lists for \$8,700. Token Ring adapter cards for the newer models cost about \$3,475. In contrast, MMAC conversion modules cost \$3,495 for two ports and \$5,195 for four ports.

"We have a lot of ancient controllers that could use a boost, so we are potentially interested," said Vincent G. Caratolo, vice president of distributed systems and services at Merrill Lynch & Co., a large MMAC shop in New York.

JOANIE M. WEXLER



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GSA Number GS00K90AGS5251-PS02.

Latest IBM notebooks outdo predecessors

Big Blue's ThinkPad line impresses users, analysts with aggressive pricing, innovative features

BY MICHAEL FITZGERALD
OF STAFF

NEW YORK — The release of three notebooks last week by IBM Personal Computer Co. may be a sign that the company has left behind its clumsy initial efforts in that crucial market.

The ThinkPad 700, 700C and 300 stack up to the competition, unlike their predecessors, the overpriced, overpowered 1465X and the underpowered NS15SLC and NS15SX.

Users and analysts were impressed by the ThinkPad line, IBM's biggest ever portable announcement. Most said they saw it as a sign that IBM may be able to turn around its fortunes in the portable computer market.

On the ball

"I was really pleasantly surprised.... They did what they told us they were going to do, for the first time in a long time. And when can you remember the last time an IBM product was cheaper than somebody else's?" said Richard E. Nelson Jr., vice president of agency systems at New York Life Insurance Co.

Delivering on that promise means that the ThinkPad 700C, a new active-matrix color notebook that will have a street price of less than \$4,000, will be the first IBM PC product in several

months to appear on New York Life's approved products list, Nelson said.

Nelson added, "This product

When less is more
IBM's new notebooks offer more features than its 3-year-old predecessor for less money

IBM PS/2 2 Model 1465X	IBM Thinkpad 700/700C
Processor: 20-MHz 80386SX	25-MHz 486SLC (upgradable)
Video: VGA	Mid-level hybrid battery
Monitor: VGA monochrome screen	Upgradable to active-matrix color
Storage: IBM 100-MB 5.25-in. hard drive	Removable hard drive
Weight: 7.3 pounds	6.5 pounds
Price: \$3,995 with IBM-type drive of installation	\$2,595, 1200-type hard drive \$4,295, 1200-type hard drive/color screen

Source: IBM

was on the drawing board before they [reorganized] so maybe it shows they're going in the right direction" as a company.

"It's yet to be determined how competitive they can be, but I think there's no question that IBM is getting more serious about this market," said David R. Korus, an analyst at Kidder, Peabody & Co.

"We will not be the premium price vendor in this market," affirmed Scott Bower, director of ThinkPad marketing.

IBM also made its ThinkPad 700T pen-based system generally available and released the EasyStation expansion station.

It cut prices on its CL575SX and existing notebooks 11% to 44%. The ThinkPad 700 and 700C use IBM's 486SLC chip and have

manager of dealer and vehicle systems at Hyundai Motor America in Fountain Valley, Calif.

Analysts said that to be successful, IBM has to turn such favorable first impressions into sales, and it must be able to deliver products on demand.

"If you have great products and you can't deliver them, you don't get a second chance [in today's market]," said Andrew M. Seybold, editor in chief of the "Outlook on Professional Computing" newsletter in Brookdale, Calif.

IBM origin

Before the announcement, sources had speculated that IBM's high-end products would be built by AST Research, Inc., but in fact the 700 and 700T are designed and built by IBM. The 300 is manufactured by Zenith Data Systems under an existing agreement.

IBM's Robert L. Kanode, director of ThinkPad manufacturing, said he expects IBM and the market to move to build-to-order for notebooks within the next six months.

Swapping made easy

"The mouse integrated with a keyboard is a good solution," and the removable hard drive would really simplify doing swap-outs in the field when you need to do maintenance and repairs," said Carrie M. Ulvestad, national

Laptop thefts spur security efforts

CONTINUED FROM PAGE 1

The list of people who have had laptop PCs stolen ranges from U.S. Army General Norman Schwarzkopf, whose plans for the January 1991 strike against Iraq were on the machine, to Compaq Computer Corp. Chairman Ben Rosen. Schwarzkopf got his back (and subsequently changed those battle plans), Rosen did not.

NCR Corp. executives in Paris is also got a rude surprise upon returning to the Nikko Hotel after dinner one night. They found the doors to their hotel rooms removed from the hinges. The only things taken by the nimble-fingered thieves were two laptops containing valuable corporate secrets, according to security consultant Paul Joyal, former security director for the Senate Intelligence Committee. An NCR spokesman, however, called the story a myth.

Joyal, now president of the Silver Spring, Md.-based security firm Integrus, Inc., said he learned from insiders that French intelligence agents stole the machines. "You have some very smart people walking around with the keys to the kingdom

under their arm, yet they treat it like a toy," Joyal said.

Many firms are starting to come to grips with the problem, but only after getting burned. An information systems director at one large chemicals plant said, "We finally became aware of just how vulnerable we were when

"FIRST THING I want to do is nail the sucker down."

BRIAN REDLER
THE EQUITABLE

the laptops started disappearing. There's a lot of competitive data on these things, so it's like stealing files out of a filing cabinet."

Some firms have come up with ingenious ways of denying access to information even when a laptop is stolen. At Conde Nast Publications, Inc., an identification chip has been placed in the laptop to verify the user's authentication to the mainframe. If a laptop is stolen, access is

turned off to that machine. The next time someone tries to dial up on the stolen laptop, the mainframe sends out a program that erases their hard disk.

Companies such as Shearson Loebman Brothers, Inc., Paine, Webber, Inc., Martin Marietta Corp., Grumman Corp. and The Boeing Co. have already instituted stringent portable computer protection policies. And Ryder Truck Rental, Inc. in Miami has an entire department responsible for laptop security.

Methods vary, but experts suggest that a good first step is to physically secure the computer. Companies such as Sun Rafael, Calif.-based PC Guardian sell 5-ft steel security cables to tightly attach a laptop or notebook to a desk or table.

"First thing I want to do is nail the sucker down," said Brian Redler, manager of information security at The Equitable insurance company in New York.

Step 2 should involve encrypting the data. Besser Computer Corp. in San Jose, Calif., has a product that encrypts the data on a laptop's floppies and hard drive. Information cannot

IBM previews ValuePoint PCs in Europe

BY MARTIN LAMONICA
OF STAFF

LONDON — IBM Europe's Personal System/ValuePoint (PS/VP) personal computer line, introduced last week, is expected to send another wave of price cutting through the already cut-throat PC market.

U.S. customers have been anticipating October delivery of the ValuePoint line, whose debut in the U.S. was recently delayed until later this month.

IBM is aiming the PS/VP line at all markets, including cost-conscious corporate users, said Bob De St. Croix, a PC analyst at International Data Corp.'s European Research Center here.

Goalposts thrown

IBM is convinced that the ValuePoint line is aggressively priced. "We're not out to start a price war, but if anybody else wants to start one we'll finish it," said Howard Ford, Personal Systems director at IBM UK.

Pricing for the low-end PS/VP series began at \$1,265 for a 25-MHz 386SLC system with 2M or 6M bytes of memory and a 80M- or 170M-byte hard disk. The PS/VP F series, based on Intel Corp.'s 25-MHz 14686X chip, started at \$1,601, while the 33-MHz 14686X-based M series starts at \$1,993. The PS/VP V series, which features Intel's 486DX2, starts at \$2,700.

The F, M and V series offer a choice of 4M, 8M or 16M bytes of random-access memory. The C and F lines come with 80M to 170M bytes of hard disk storage, and the M and V lines offer up to a 256-MB hard disk.

The PS/ValuePoint line will compete with not only other PS/2 models but also IBM clones sold in Europe under the Amora label by IBM's subsidiary ICPL, according to De St. Croix. ICPL's 486-based series is comparable to IBM's PS/VP M20 PC and costs \$1,991, only \$555 less.

accessed without a password. Better yet, "Only allow people on the road to store information to their floppy," Joyal said. "Then when they're done working, they can just carry the floppy around with them."

Another strategy is forwarded by Security Dynamics Technologies, Inc. in Cambridge, Mass. Its SecurID works in tandem with the host mainframe to continually change the login used to dial a laptop. The more good when a laptop was lifted may be obsolete minutes later.

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Lotus to give Notes packaging a face-lift

Company looking for ways to combat user view of groupware product as being too expensive

BY ROSEMARY HAMILTON
CW STAFF

CAMBRIDGE, Mass. — Lotus Development Corp. hopes to soon smoothe out the lingering perception that its Notes groupware platform is too expensive and too large by introducing some new packaging schemes that will position it as easier and cheaper to install.

Company executives said Lotus also continues to look for ways to push Notes out to greater numbers of users, but they added the firm does not currently plan to release a scaled-down or runtime version of Notes.

"A concept that some users have been asking for is a runtime model. That's something that we've talked about," said Robert Weiler, Lotus' senior vice president of North American operations. "We do not have something like that coming. Not now."

Several Notes users contacted last week said they had discussed the notion of a scaled-down version of the software, or

Notes Lite, either with Lotus officials or at user group meetings but had not yet received final word from the company.

Kevin Brown, chairman of the Boston Notes User Group, said he had heard of a scaled-down product that would include "the ready-made applications and the ability to use mail." Sample Notes applications are delivered with all releases of Notes.

In addition, other users said they had heard Lotus would deliver a version without the full-blown application development environment.

On the notion of scaled-down Notes, Brown said that while no confirmation had come from Lotus, "it would be a good idea because it is a way to get Notes more embedded."

Chif Conseligh, director of marketing for communications products at Lotus, said, "A lot of people have a lot of ideas on how to get Notes out to more and more people. Our goal is to get it out to more people, but we have more implementation work to do on that."

Weiler said new Notes packaging, scheduled to be introduced this week at Network '92 in Dallas, will at least help manage cost issues. While value-added resellers (VAR) already sell Notes in small quantities, the packaging was designed to rein-

force the notion that users can license only a few copies. The packaging will also include new installation documentation designed to make it easier to bring up a Notes environment.

"This is to get away from the concept our adversaries keep

trying to pump out about Notes being a [\$62,500], enterprise-wide product," Weiler said. The group packs are aimed at companies and users wishing to do small pilot projects.

Lotus actually eased up on pricing restrictions months ago by discontinuing its policy of requiring a 200-node minimum, which took the price of Notes above \$60,000. Lotus and its VARs have been working with a Notes list price of \$495 per user.

Notes nears 1,000 served

Lotus is shooting to hit the 1,000 mark for Notes customers by year's end.

As of early this month, the company counted 800 customers, nearly 200 of which were picked up since June from the IBM/Lotus deal. When IBM selected Notes as the local-area network piece of its office strategy in July, effectively killing its own OfficeVision/2 LAN offers — it also offered a trade-in deal for its office LAN customers to move to the Lotus software. This trade-in program expired Sept. 30.

Robert Weiler, senior vice president of North American operations at Lotus, said 187 IBM customers took IBM up on its offer. Richard Sullivan, director of office marketing at IBM's U.S. marketing group, said that number represented

60% of its total OfficeVision LAN users. The remaining 40% have so far elected to stay with the IBM LAN software.

Weiler said that without the IBM deal, Lotus would "still be trying to establish credibility. Companies have said to us that without IBM, you guys would still be talking to our guy who buys spreadsheets."

The OfficeVision/2 LAN deal was actually an extension of a 1991 agreement that set up IBM as a remarketer of Notes. However, Weiler said the LAN piece was critical to winning over IBM users. "A lot of people were waiting for [OfficeVision/2] LAN. These were people who had money budgeted or were waiting for it," Weiler said.

ROSEMARY HAMILTON

BeyondMail gives users access to Notes data

Cheaper approach may force Lotus to cut prices

BY JOANIE M. WEXLER
CW STAFF

CAMBRIDGE, Mass. — In a move lauded as the industry's first step toward mix-and-match groupware, a third-party vendor last week gave electronic mail users access to Lotus Development Corp.'s Notes databases without having to run a Notes

client.

Analysts said the announcement is likely to cause Lotus to rethink its Notes pricing structure, something Lotus executives last week indicated they are not currently planning to do (see story above).

Beyond Mail, rolled out by BeyondMail for Lotus' Notes, a Microsoft Corp. Windows-based version of its messaging system that gives non-Notes users limited participation in Notes environments for about one-fifth the cost of running a Notes client.

Modular separation

Users and analysts expressed relief at what they consider to be the kickoff of a trend toward separating mail front and back ends. Such modularity would allow users to choose their interface and messaging features independently from an underlying mail engine.

"What must happen overall is that mail front ends get separated from back ends," said Art Beckman, manager of information technology services at Pacific Gas & Electric Co. (PG&E) in San Francisco. PG&E is a Notes shop that does not use the Notes integrated messaging capability, in part because it is "ru-

dimentary," Beckman said.

Beckman also said he does not want to have to gateway between his Banyan Systems, Inc. Vines network system software and the Notes mail systems and run two parallel systems. The Beyond product does not require a BeyondMail-to-Notes gateway.

Notes participation

Also key, Beyond has beaten Lotus to the punch in integrating its mail system with most Notes groupware functionality. Lotus has yet to allow its own CC-Mail package to participate in Notes. In fact, some users have criticized Lotus for not enabling them to easily integrate applications from other vendors into Notes.

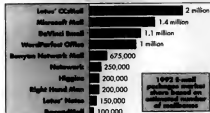
However, several observers agreed that large Notes shops looking for inexpensive client alternatives are not likely to rush to Beyond for their enterprise messaging platform, although that is Beyond's stated goal.

One reason is that they expect their current mail vendors to begin adding to their own software at least some of the sophisticated sorting and filtering capabilities that are Beyond's strength.

"My guess is that everyone will build in mail-filtering capabilities eventually," said Howard Maynard, senior vice president and director of MIS at Young & Rubicam, Inc., a worldwide advertising agency and large Notes user. Young & Rubicam already uses a variety of mail systems,

Growing competition

BeyondMail has a long way to go to catch CC-Mail



CW Chart Stephen Paster

including CC-Mail

In fact, 1,200 CC-Mail users at a user group meeting in San Francisco last month saw a demonstration of a CC-Mail version that contains some filtering capabilities, although Lotus did not announce a delivery date.

In addition, because Beyond is a relatively small mail vendor — with about 100,000 users compared with 3 million CC-Mail desktops — users might not be willing to turn to the lesser known technology for an enterprise system.

"I'm not interested in mail for Notes access if it requires me to learn a new system," Maynard said. "While saving \$300+ per user is a lot of money, it's not so much if you consider the total inconsistency in energy, training and consistency" throughout a large firm.

Lotus' Notes lists for \$495 for a client/server software bundle.

BeyondMail for Lotus' Notes costs about \$100 per desktop. CC-Mail in large installations has dropped to less than \$50 per desktop, according to David Whitten, program director of office information systems service at Gartner Group, Inc., a Stamford, Conn.-based consultancy.

However, the economics of the Beyond game "force Lotus to rethink its [Notes] pricing," said David Coursey, editor of "P.C. Letter," an industry newsletter owned by *InfoWorld*, a sister publication to *Computerworld*.

To date, Lotus has not announced a plan to allow a CC-Mail-only user to access Notes data, "nor is it in their best interest to do so" because it could curb Notes sales, Coursey said. "However, Beyond and others will be able force their hand."

E-Mail skips need for Notes client

AT A GLANCE:

Beyond Mail for Notes

- Microsoft Windows-based.
- Replaces Notes Mail front end.
- Gives BeyondMail users access to Notes databases and conversations without requiring a Notes client.
- About \$100 per desktop.
- Availability slated for first-quarter 1993.

Messaging costs cut by Novell

BY JOANIE M. WEKLER
CW STAFF

SAN JOSE, Calif. — Amid a division reorganization started about six weeks ago, Novell, Inc. last week slashed prices for its neophyte Global Messaging Server by roughly 70% and added some of the key mail protocols it pledged to support when it announced the product in March.

The goal behind reducing prices of the NetWare-integrated distributed messaging system to under \$7 per mailbox was the realization that "we need scalable pricing available to a wider range of users," said Arvind Agrawal, vice president and general manager of Novell's Messaging Products Division. "We

want to give the technology a boost... by making available a widely deployed messaging infrastructure."

However, while the price reduction "could provide incentive to users, it will take time for Novell's strategy to take hold," said

Judith Rosati, an analyst at International Data Corp. in Framingham, Mass.

Rosati also predicted the move will not spur a price war because competing products from SoftSwitch, Inc., Digital Equipment Corp., Microsoft

Corp. and Hewlett-Packard Co. do not make for apples to apples cost comparisons. Novell also filed in its blueprint for integrating Unix-oriented Simple Mail Transfer Protocol (SMTP). IBM's Systems Network Architecture Distribution System (SNADS) and X.400 protocols into its Message Handling Service-based Global Messaging engine, which has been shipping for

about two months.

Prices and availability are as follows:

- **SMTP:** \$2,995 for an unlimited user version; available in late November.
- **SNADS:** \$2,495 for a 20-user version and \$4,995 for an unlimited user version; available now.
- **X.400:** \$6,995 for an unlimited user version; available first quarter 1993.

Bypass goes nationwide

BY JOANIE M. WEKLER
CW STAFF

OAKBROOK TERRACE, Ill. — On the heels of a recent Federal Communications Commission decision allowing alternative access carriers to link into local public networks for long-distance access, MFS Datanet, Inc. last week rolled out a nationwide local-area network interconnection service.

With the announcement of its High-speed LAN Interconnect (HLI) service, MFS has become the first "bypass" carrier to extend its network beyond metropolitan-area islands.

The recent FCC ruling allowing MFS Datanet and others to connect to existing long-distance networks through local Bell company networks will bring the service to market more quickly and less expensively than if the carrier had to build its own network infrastructure, said Al Fenn, MFS Datanet president.

HLI will provide users with wide-area speeds equivalent to the native speed of the LANs attached to either end, Fenn explained. The carrier said it intends to deliver the service over T3 (45M bit/sec.) and Asynchronous Transfer Mode infrastructures.

The service will initially roll out in December in Washington, D.C., New York and Chicago and is slated to be available by mid-1993 in all 14 metropolitan areas now serviced by MFS.

Pricewise, Fenn quoted a \$4,800-per-month price for linking Ethernet networks between Boston and Washington, D.C. User sites in each city would pay \$900 per month, plus share a fixed \$3,000-per-month intercity transport fee.

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NEWS SHORTS

EDS, HDS execs shuffle

Electronic Data Systems Corp. last week placed Gary B. Moore from his post as chief executive officer of Hitachi Data Systems Corp. and named him chairman of EDS Japan. He was replaced by John Staedke, 51, another former EDS executive who became HDS' executive vice president of marketing last year. Moore would strengthen ties between Hitachi and EDS, analysts suggested.



John Staedke

DEC management moves begin

Digital Equipment Corp. CEO Richard Palmer moved quickly last week to appoint William Strecker vice president of engineering and chief technology officer and to appoint Richard Poulsen president of Digital Europe. Poulsen replaces Pier Carlo Pintori, who departed in July to become CEO of The Aik Co. Bobby Chomara succeeds Poulsen as vice president of DEC's General International Area (GIA). The GIA covers all countries except the U.S., Europe and Africa.

Intersolv to buy developer

Intersolv, Inc. intends to buy the major assets of Interport Software Corp., a Fairfax, Va.-based developer that recently filed for Chapter 11 protection. Interport developed some of the technology used in Design Recovery, Intersolv's re-engineering tool set announced in January. About 10 of Intersolv's approximately 30 employees are expected to join Interport.

Software piracy bill passes

Just hours before adjourning last week, the U.S. Senate approved a bill, passed earlier by the House, that imposes illegal criminal penalties — including prison sentences of up to 10 years — for unauthorized copying of software, which is defined as illegal copying of 10 or more copies with a retail value of \$2,500 or more in a 180-day period. The president is expected to sign the legislation.

FDDI prices keep dropping

The cost of a single link to a 100MB bit/sec. Fiber Distributed Data Interface network running over copper wiring has dropped below \$1,000. Interphase Corp. in Dallas last week rolled out a \$995 adapter for Extended Industry Standard Architecture-based personal computers and workstations and a \$1,495 single-attach fiber version. Until now, single-attach copper connections have hovered in the \$1,300 to \$1,500 range.

Short takes

Calgary, Alberta-based Amoco Petroleum Co. last week said it has signed a five-year data processing and network operations outsourcing contract with SHL Systemhouse, Inc. valued at \$70 to \$80 million. . . . Memorex Telefax Corp. and Ampertel Corp. in Chatsworth, Calif. said they will jointly develop an IBM-compatible redundant arrays of inexpensive disks (RAID) product to compete with Storage Technology Corp.'s Ischberg RAID disk array. But they did not give shipping dates. . . . DEC last week broke ground for a semiconductor facility in Hudson, Mass., that will manufacture future versions of DEC's Alpha 64-bit microprocessors. . . . The Internal Revenue Service has awarded Unisys Government Systems, Inc., a Unisys Corp. subsidiary, a one-year, \$115 million contract to provide information systems, application and system software support and training to support the IRS' tax returns processing. . . . DEC said it will develop and incorporate X/Open Co. XPC4 specifications across the company's Open VMS and Unix platforms. . . . The U.S. Council on International Banking is co-sponsoring a study to find out whether, how and to what extent information technology is making banks more productive. . . . GE Information Services announced a new, Unix-based electronic data interchange translation and management system.

Sun slowed by overloaded plate

CONTINUED FROM PAGE 1

thing, and the local sales office doesn't know what's going on," said Harry Perrin, assistant vice president of investment systems at Teachers Insurance Annuity Association in New York, one of Sun's large commercial customers, with 340 workstations.

"The delays have been very annoying, but it's more a credibility issue now than anything else," Perrin added. He ordered 20 of the SPARCstation 10 Model 41s in May and then agreed to one of Sun's upgrade plans as an interim step. He bought SPARCstation 2s with the promise of an upgrade to the Model 41s. When he tried to swap the SPARCstation 2s for the smaller Model 20s, however, Perrin discovered he was locked in to the prior promotion and had to wait.

Mark Factor, MIS director at the Boston-based Au Bon Pain, Inc. chain of French bakery cafes, also declared himself "very disappointed in Sun" after a Model 41 he was promised in August never materialized.

"Sun has to realize they're not dealing with a single-user workstation base anymore," Factor said. "They have whole corporate enterprises relying on them. They've got to think a little more like IBM would, not like a standard PC maker."

At Du Pont Co. in Wilmington, Del., the research and development department opted to buy SPARCstation 10 clones rather than wait. "You just can't get them from Sun," said David

Pensak, corporate adviser for computer technology at Du Pont's R&D lab. "When we asked, they said they had no idea when they could ship. So we ordered clones."

Pensak said he was also unimpressed with the SPARCstation 10 Model 20 — an "interim," unadvertised machine based on a 33-MHz version of TTA Viking SuperSPARC chip. The Model 30 runs at a 36-MHz clock speed, while the tardy Model 41 will run at 40 MHz. "I'd rather buy a first-class ticket on the HMS Titanic than do a limited-availability machine," Pensak said.

Although some Sun sales representatives have been blaming TI's chip production problems for the hardware delay, Sun officials stressed that TI has met all production targets and is not at fault. The sales force "shouldn't be telling [customers] that story," Godre said.

Other users have a more resigned view of the delays.

"I guess I'm kind of jaded," said Bob Vick, systems manager at Fidelity Investments Inc. in Boston, which just received four SPARCstation 10s two weeks ago. "Every hardware and software vendor promises things before they're able to deliver."

While the hardware delays may be vexing to some users in the short term, Sun is facing a far more difficult and long-term job persuading users to move to Solaris 2.0.

"Solaris 2.0 scares us to death," said Jerry McEachern, manager of technology resources at the *Houston Chronicle*, which is building an open systems installation that will eventually include 1,000 Sun systems. "Our applications are written specifically for the current operating system, and it's going to be a big change for us."

Amdahl gives Unix a boost

SUNNYVALE, Calif. — Amdahl Corp. last week aligned its 11-year-old UTS Unix system with Unix System Laboratories, Inc.'s (USL) System V, Release 4, making it easier for users to move toward a single Unix standard at mixed-vendor sites. The firm announced UTS 4 as an enhanced version of its 2-year-old UTS 2.1 operating system for IBM-compatible mainframes.

Amdahl has several hundred UTS sites worldwide but hopes to ride the open systems wave to gain more. In that, UTS 4 supports most major Unix standards. It is based on USL's System V, Release 4.1 ES, which combines features from several flavors of Unix.

But UTS users will have to change some binary code to gain full advantage of UTS 4 features, said Mark Bussmann, Amdahl's director of open systems marketing. Amdahl is providing migration aids to revise UTS 2.1 code and will allow users to have both UTS 2.1 and UTS 4 for 90 days at no extra charge.

Analysts say they doubt whether many IBM-compatible mainframe sites would jump on the open systems bandwagon.

"It does not appear that Amdahl is creating a market so much as they are responding to a niche opportunity," noted Mark Hess, vice president of Gartner Group, Inc.'s large-computer group in Stamford, Conn. "It will make our Unix platforms even more compatible," said UTS 2.1 user Peter Bauer, director of information systems at the Marshfield Clinic. The Marshfield, Wis., site runs Unix on an Amdahl 9905. A mainframe, a Data General Corp. laboratory computer and Unix workstations.

UTS 4 will be generally available in the first quarter of 1993, with prices ranging from \$20,000 to \$45,000 — the same price range as UTS 2.1.

Monthly license fees range from \$4,500 to \$34,500, depending on the size of the computer.

JEAN S. BOZMAN

Chip wave

The long-awaited "Titanium" chip for low-end workstations in the Scalable Processor Architecture (SPARC) market splashed ashore last week as TI and Sun unveiled their jointly developed microSPARC chip.

The 50-MHz single-chip microprocessor holds forth the threat of low-priced workstations that can invade high-end personal computer territory with superior performance and greater scalability. Samples of the microSPARC processor are available now from TI for \$500. Volume production in the fourth quarter of this year will provide microSPARC at \$179 each for 10,000 unit quantities.

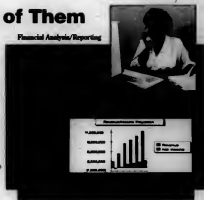
Sun is expected to introduce a low-end, under-\$5,000 color workstation based on the microSPARC chip next month. TI officials said a raft of other SPARC-compatible products will follow as well, including X Window System terminals, portables and desktop systems.

"At \$179, the 50-MHz microSPARC has substantially higher performance in terms of MIPS than the [Intel Corp.] 486DX microprocessor, but it sells for about half the price," said Wally Thines, executive vice president of TI's semiconductor group. "This chip certainly represents the next stage in this whole convergence of the PC coming up and the workstation coming down," said Ken Anderson, author of a comprehensive guide to Unix workstations published by Allyn, Inc. in Secaucus, N.J. "This also feeds into Sun's strategy to drive the cost of the desktop down as far as they can with a lot of performance."

The low-end Sun workstation will be the first high-volume platform shipping with the new Solaris 2.0 operating system.

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Best route to CASE

CONTINUED FROM PAGE 1

niques. The right mix of caution, perspective and experimentalism is a key, according to 10 heavily invested users interviewed by *Computerworld*.

Users have shifted their focus to bigger concepts once wholly separate from application development. Business process re-engineering, for example, now serves as an entrée for CASE products. The current rage to plot and remake how a firm does business calls for just the tack CASE takes, proponents say. By looking at information systems in chunks of tasks or models, CASE philosophy meshes with that of business process re-engineering.

The definition of CASE is growing from "set of tools" to "way of thinking," according to Peter Cobin, manager of technical analysis at Otis Elevator, Inc. in Farmington, Conn.

Moreover, done right, CASE is never finished. Cobin and other users have teamed CASE with project management tools that provide an enterprise-wide view of IS rather than focusing on single development tasks. CASE users never le- gitimately involved in business

planning to really exploit the technology, agreed Bernie Stepan, director of special technical services at Computer Power Group's San Francisco office.

Slow is a watchword for CASE shops. Several users who slipped tools in place and dove into development later regretted their haste. "Whatever you do, don't slam people up against a harsh deadline to learn this stuff," advised Kim Albee, a member of the research and integration team at the Minneapolis-St. Paul office. The newspaper plans to rewrite six major applications, with a go-live target of January 1994, using KnowledgeWare, Inc. tools.

Also part of the group therapy is learning, on message, a new way of programming. That is, developers must abandon a line-by-line code-writing style for business and data modeling. Programmers must drop a solo, craftsmanlike approach for an orderly, team-oriented method.

"You're no longer developing in a vacuum, doing each system separately," explained Ray Speight, development manager for North Carolina's Department of Administration.

Many CASE initiatives run into training woes

CASE is making a double-duty downsizing and data center consolidation possible at the Federal Reserve System, which plans to whittle 12 processing hubs to three by 1994. And that project — at least in one district — has brought home the need to face up to training issues. The "T" word, it seems, is cause for grief in many CASE shops.

Take the bank's San Francisco office. Efforts to pilot an automatic check-handling system using KnowledgeWare's Application Development Workbench (ADW) for front-end analysis and design work hit a snag when, at code-generation time, the staff reverted to manual Cobol writing.

"We just didn't have time to use KnowledgeWare's general programming tool," said MIS manager Massimo Velasquez. "Our training wasn't that complete."

That is probably because Velasquez's group may have under-

estimated the amount of training CASE requires.

It did not set up a methodical instruction program led by an outside party, a tactic imperative to doing good CASE, experts said. Federal Reserve simply handed the tool to developers to play with to see what they could construct, she said.

However, like other integrated CASE tools, ADW is time-consuming to learn because training Cobol programmers in the information engineering methodology is a big hurdle. "A new methodology means a new mind-set," Velasquez noted.

So Velasquez is taking a step backward before moving forward by hiring Ernst & Young to help the staff learn information engineering, data modeling and other techniques for organizing development projects.

A wiser Velasquez now offers one caveat for new users: Do not underestimate the culture shock your shop will experience.

Being a trailblazer isn't easy

Levi Strauss & Co. doesn't have CASE all sewn up, but the jeans maker has been on the cutting edge of the technology since its 1989 investment in KnowledgeWare's Application Development Workbench (ADW).

Sound nice? It was no fun at all, says Donna Rund, director of information engineering.

As one of KnowledgeWare's biggest customers, the clothing firm enjoys a close relationship with the vendor. But Levi Strauss has often had to tackle problems before the tools to help have existed from either KnowledgeWare or other vendors.

That is not necessarily KnowledgeWare's fault. Rund crossed application development frontiers. For example, she attempted cooperative, local-area network-based development early on, setting up teams of six or seven programmers for a start-to-finish pilot project with ADW.

Although automation did speed up parts of the development process, productivity actually fell because the tool set was organized so that just one person could work on a section at a time.

"We [learned we] had to pace our strategy. Our vision was ahead of the CASE market," Rund explained.

So Levi Strauss invented its own LAN development system, folding into the ADW scheme CA-Talon, a fourth-generation language now sold by Computer Associates International, Inc., and



"We had to pace our strategy. Our vision was ahead of the CASE market." Donna Rund

Micro Focus Cobol, a code generator from Micro Focus Group, Inc.

Other large KnowledgeWare users visit Levi Strauss to learn from its mistakes and successes, such as mixing tools from different vendors. Visitors such as Humana, Inc. and The Gap, Inc. take home nitty-gritty information such as just how integrated data types are or which data or process model layer you can drill down to — details not always available at vendor-sponsored user-group meetings.

One of the thornier problems in the beginning for Levi was sorting out which glitches were caused by ADW and which resulted from a programmer skill base ill-suited for CASE.

Sometimes ADW took more arrows because of a lack of appropriate skills than because of actual faults, Rund observed.

CASE is now a key piece of Levi Strauss' massive effort to re-engineer its business worldwide. CASE focuses on a balance of business and technical skills, which are "what we need going into the future," Rund said. But CASE is too narrow a vision for Levi Strauss. Which products the company uses matters less than shifting programmer orientation.

"We have to think in piles of design, not piles of lines of code," she said.

CASE helps forge business/IS alliance

It is not as cozy as, say, a Democratic bus ride across the Midwest, but the relationship between business and information systems at Ultramar Canada, Inc. is closer than it was two years ago. And CASE was the lubricant, according to Ian Wickins, supervisor of wholesale systems.

"Whether we [in IS] are making inroads in setting business direction, I don't know," Wickins said. "But we're involved an awful lot in showing them ways to improve what directions they are taking."

While Ultramar has hired its three CASE vendors for tool instruction, the oil company relies on internal executives to teach IS about the business side of the house.

When CASE comes in is the role it played in pointing out the need for Ultramar's IS staff to build business acumen in addition to technological know-how. This resulted in the firm's devising a training profile for each programmer that assessed business savvy, tool proficiency, interpersonal skills and

Ultramar Canada, Inc.
Louisville

Business:
\$12 million of oil company.

CASE vendor:
Combination of products from Bachman Information Systems, Interact, Inc. and IBM since 1990.

Biggest lesson:
Never underestimate the amount of training programmers will need.

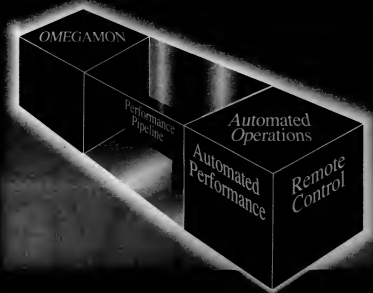
time management. As a result of tying the profiles to regular performance reviews, according to Wickins, Ultramar has witnessed 15 of 40 projects in the last year coming in on time and within budget.

In the process, IS has taught management a thing or two, Wickins said. For example, an IBM DB2-based point-of-sale (POS) system erected last year was designed using products from Bachman Information Systems, to interface with existing applications. The POS program collects customer data that is later used for marketing and billing.

It is a relatively simple application, but one that IS — not management — invented, according to Wickins. "We probably wouldn't have gotten moving on it without the business training," he added. He said IS' new understanding of how Ultramar functions lets developers come up with better ways to get those jobs done, rather than reacting to user requests.

STORIES BY KIM S. NASH

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DEC makes massively parallel move

Parasphere software environment offers many tools to ease application development

BY MELINDA-CAROL BALLOU
CW STAFF

CAMBRIDGE, Mass. — Digital Equipment Corp. is attempting to cultivate the nascent massively parallel computing market via a combination of reengineered hardware, university seedling programs and software products that speed application development.

"Our goal is to simplify the development environment so that you don't have to be a rocket scientist programmer or re-

search specialist to take advantage of parallel processing," said Ram Appalaraju, DECmp program manager, at a briefing here last week. Analysis said that both the lack of tools and the extreme difficulty of creating applications has hampered the growth of the massively parallel market.

DEC's massively parallel software environment, dubbed Parasphere, includes a "reengineered" Motif-based implementation of DEC's Digital Parallel Programming Environment (DPPE). Originally developed by Maspar Computer Corp. in

Sunnyvale, Calif., DEC's version of DPPE uses the DECbase computer-aided software engineering tool kit and a Fortran compiler based on specifications drawn up by the High-Performance Fortran Forum, a consortium of parallel computing vendors and researchers.

DPPE includes a DECmp Parallel Performance Analyzer to fine-tune parallel programs and a DECmp Parallel Debugger to automatically identify code problems.

DECmp High-Performance Fortran

adds parallel extensions to standard Fortran.

"[DEC's] overarching software environment is impressive — ISVs [for example] want to be able to write to one environment, rather than both the MIMD and SIMD architectures," said Debra Goldfarb, director of high-performance research at International Data Corp., a market research firm based in Framingham, Mass.

Parasphere offers program development tools, including DECmp VAST-2 Optimizing Preprocessor to translate linear Fortran into parallel Fortran, math and image libraries, language compilers, system software; and third-party applications.

DEC also announced new DECmp 12000/SX single-instruction, multiple-data computers based on comparable machines from Maspar that are said to be four times faster than previous models (see story page 84). They also provide hardware I/O subsystems that facilitate high-volume, high-speed external data storage, officials said.

The Intel Corp. 1860-based DECmp 12000/MX, the first multiple-instruction, multiple-data system to be offered by

OUR GOAL IS TO simplify the development environment so that you don't have to be a rocket scientist programmer or research specialist to take advantage of parallel processing."

RAM APPALARAJU
DEC

DEC, was also announced and is expected to ship by the summer of 1993, DEC officials said. The company will eventually ship parallel machines that incorporate the Alpha chip, they added.

Despite the availability of more effective software tools, parallel programming requires a very different approach to algorithm creation and application development. DEC is therefore supporting an aggressive university discount program to encourage future parallel programmers, as well as users of DEC equipment.

For example, DEC contributed several hundred thousand dollars worth of hardware to Washington University in St. Louis, according to Michael Miller, an associate professor in the electrical engineering department.

Florida Atlantic University in Boca Raton, Fla., installed one of the DECmp 12000/SX machines recently with the help of DEC and Motorola, Inc. "We have quickly gotten our faculty involved in putting courses together and getting [the machines] out in front of students at the graduate and undergraduate levels," said Joseph Campbell, associate dean of engineering.

Pricing is as follows: DPPE, slated to be available in early 1993, is priced at \$4,710; DECmp High-Performance Fortran costs \$11,800; DECmp VAST-2 Optimizing Preprocessor is priced at \$11,800; and DECmp Image Processing Library and DECmp Math Library are \$4,710. DECmp 12000/SX ranges from 1,024 to 16,384 processors and costs \$175,000 to \$1.6 million.

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ADVANCED TECHNOLOGY

Financial services firms move in parallel

Massively parallel processing-based systems bring competitive advantage to early adopters in world of finance

BY THOMAS HOFFMAN
CW STAFF

In the early '80s, financial services companies were among the first from the manufacturing sector to adopt the use of "engineering" workstations. Now, the industry is pioneering the use of supercomputers and massively parallel processing (MPP) computing systems to conduct complex financial analyses for itself and its customers.

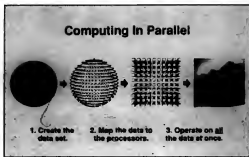
Early users of these high-performance computer systems have given their companies a competitive advantage, especially on tasks requiring complex analyses.

Consider Prudential Securities, Inc., which began using supercomputers in 1988. The company recently upgraded from an Intel Corp.-based IPSC/2 parallel-processing supercomputer to an IPSC/860 system that houses 32 1860 microprocessors.

Time savings

Prudential used to perform so-called mortgage-backed securities analyses for its customers on Digital Equipment Corp. VAX 8800 and 6440 minicomputers. The VAXs often took 24 hours or more to do the job, said David Audley, director of financial strategies at Prudential. Using the Intel machine, Audley said, transactions are usually done in less than one minute.

Flushed with the success of these first Intel platforms, Prudential will next month add one of Intel's next-generation MPP systems, the Paragon. Prudential ordered the low-end machine, which has a list price of \$2 million and is rated at 5 billion floating point operations per second



(GFLOPS). Audley said the Paragon system will offer up to 10 times more throughput power than the IPSC/860. Specifically, the IPSC/860, with its 32 nodes of processors performing simultaneously, achieves a computing performance of 760 SPECmarks. A SPECmark illustrates how much faster a high-performance machine can run an industry-standard benchmark. The new Paragon system, Audley said, will incorporate 40 microprocessors and achieve 2,800 SPECmarks.

"We've been able to enter product areas and business lines and compete at a more profitable level with these machines than we would have been able to do" before installing the parallel systems, said Audley, who is affectionately known as "the rocket scientist of Wall Street" because he was the software and systems development chief for the Strategic Defense Initiative's "Star Wars" program prior to joining Prudential in 1987.

One market barrier that has impeded the widespread use of super-

computers and MPP systems has been their high cost.

Such high-performance systems can cost from less than \$200,000 for an entry-level MPP system to more than \$60 million for a high-end machine.

Nevertheless, some Wall Street firms, including Prudential, have received fast paybacks for their investments in these systems.

Financial appeal

Audley described a recent transaction Prudential conducted for a multi-billion-dollar client. Because of the speed and effectiveness of the IPSC/860, the client was impressed enough to award Prudential a contract that paid for the company's Intel system.

Besides Prudential, notable users of massively parallel processors in the financial sector include Bear, Stearns & Co., J. P. Morgan & Co., Merrill Lynch Mortgage Capital, Inc., The Federal Home Loan Mortgage Corp. (known as Freddie Mac), American Express Travel Related Services and Dow Jones & Co.

In general, financial services firms tend to use MPP systems instead of supercomputers. The appeal of MPP comes down to cost.

"These companies are considering massively parallel systems more than supercomputers for price advantage," said Stavros A. Zenios, associate professor at The Wharton School at the University of Pennsylvania.

However, Zenios said, there has been skepticism by some financial firms about MPP systems because of what he believes is a misperception that these systems are not mature and cannot perform as expected.

While Zenios said those beliefs are wrong, he conceded that there is a dearth of robust application software on the commercial market targeted for financial analytics in parallel computing.

Some early MPP system users de-

The making of MPP

By now, most people in the computer industry have at least heard of MPP systems. However, not everyone is familiar with the concept behind MPP systems and how they compare with supercomputer and traditional mainframe architectures.

Unlike supercomputers, which usually house one powerful processor in a complex instruction set computing architecture, MPP systems consist of hundreds, sometimes thousands, of inexpensive, scalable, redundant instruction set computing microprocessors operating in parallel. Both systems are used for complex computations, analysis and modeling.

Because they utilize many microprocessors, MPP systems tackle assignments by breaking up the analysis into different tasks. To see how this works, try this test at your next computer conference.

Let one guest be the mainframe computer. Ten or more guests will stand for the MPP system. Now give each "system" the same task: sorting through a deck of cards to remove all cards with hearts. The MPP players will complete their assignment long before the hard mainframe finishes his job.

developed their own applications in-house. Merrill Lynch Mortgage Capital in New York developed collateral mortgage-back obligations analytic applications for its I/860 MPP system, based on similar applications the firm used on its IBM 3090/60S mainframe.

Still, early users are looking for system enhancements. Larrin McArthur, who works in systems development at Merrill Lynch, said he would like to see a more robust version of the Unix operating system for its IPSC/860 MPP system. Intel is working on a stronger version of Unix for its MPP systems.

But Audley, whose firm also developed its own financial applications for the I/860, is not upset by the lack of financial software for high-performance computing environments. In fact, he's delighted by it.

"In an industry such as ours, the lack of application software allows us... to compete most favorably with industry competitors," he said.

Parallel exploitation

Many of the leading supercomputing and MPP systems vendors, such as Cray Research, Inc. and Thinking Machines Corp., are forging close ties with database vendors such as Oracle Corp. and Sybase, Inc. to exploit their powerful relational database management system environments for application development.

For example, NCR Corp. is working with Sybase and Oracle on application development for NCR's 3900 parallel processing system, according to Mike Deany, assistant vice president of major financial accounts at NCR. Next year, NCR is slated to introduce its next-generation parallel system, the 5700, which it jointly developed with its subsidiary, Teradata Corp. Teradata, acquired by NCR last year, is now part of NCR's Large Computer Systems Group.

Meanwhile, MPP vendors are working on new systems. Thinking Machines is working on memory and processor upgrades for its CM-6 MPP systems, which it introduced last year. Cray Research is scheduled to introduce new software packages for the financial services sector by early 1989. Cray is testing its next-generation MPP system, code-named the Cray T-3D. The system will incorporate DEC's Alpha chips. No timetable for delivery has been set.

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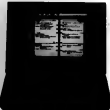


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EDITORIAL

Cat in the hat

For the past several months, we've been running a series of articles on our experience of moving to client/server computing. We're replacing our once state-of-the-art minicomputer-based editing and composing system with a spiffy workstation/PC arrangement.

It's been hell.

Also, for the last year I've been attending numerous conferences and seminars as well as informal discussions where users have spoken about their moves to client/server and the PC development worlds. The most accurate summary on the subject came from one IS manager, who said this: "Whatever anyone tells you about downsizing, client/server or whatever, take it from me. It's going to be twice as hard, take twice as long and be a lot more expensive than you thought. But I think it's worth it."

As we approach the 75% completion stage of our installation, even our cynical users — who have suffered mightily under the weight of the installation — are starting to see the light. They are burning fewer effigies of our suppliers, and some actually enjoy using their new workstations to build the pages you read.

However, some of the basics of our operations that are so crucial to a newspaper, such as file management, still can't be done as well as they can on the creaky old mini-based system. And other discrete features of the old system have not yet found their way into the new one. They're coming — we are told. They're coming.

The point here isn't to bore you with our problems. If you're moving to client/server or in some way seeking to rightsize, you no doubt have your own. But consider this: Of the client/server applications in use to today, perhaps as many as 90% involve minis and mainframes as the server. Why?

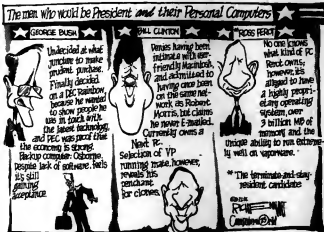
To get some good reasons, consult the article "Why PC development stinks" in our Sept. 28 issue. The bottom line is that if your company's development is team-oriented (and if it isn't, please check your pulse — your operation might be dead), PCs lack the tools and methodologies that mission-critical applications demand. That's why most serious development takes place with big iron at the hub, not because IS managers have a fondness for big blue chunks of metal. By the way, the article was written by Microsoft's director of enterprise computing, not by some mainframe bigot.

At some point, the numbers will reverse and 90% of development will take place independent of big iron. However, there are several weeks between now and the end of the century.

Our rightsizing experience has shown us the light of the future, and there are many marvelous things coming just around corner. Meanwhile, we have to get a paper out Monday.

Bill Luberis

Bill Luberis, Editor in chief



LETTERS TO THE EDITOR

Letter criticizing OS/2 triggers angry responses from readers

Michael Shalloo's remark in "Letters to the Editor" (CW, Sept. 14) about Windows 3.1 compatibility is off base. IBM has stated on numerous occasions that Windows 3.1 support will be available with the next release.

As for the time he couldn't boot after installing a driver, there's some interesting reading in the README file. Interesting enough, I actually read it and know how to recover.

As for the quirks? Windows wasn't a stable product, much less a serious one, until 3.0. I work with Windows 3.1 at my office and use OS/2 2.0 at home, and I have many of the same packages installed on both systems.

Yes, I find that initializing applications on OS/2 is slower, especially Windows applications. But once up, they appear to run just as well. I also have to reboot my Windows system at least once a day due to a crash of some kind, but not OS/2.

I also have a DOS application that I cannot run under Windows because of insufficient base memory. So I have to drop Windows to run it. With OS/2, it's no problem. It gives a very clean 640K to run my DOS application in.

Granted, I wish the documentation was better, but Microsoft ain't doing so hot either. Has any-

body figured out EMM386 by reading the MS-DOS manual? OS/2 is probably for the power user, but when you consider all the goodies that come with it for \$139, it's one hell of a deal!

Jim Herman
Seattle

I am beginning to wonder about people [Michael Shalloo] who proclaim their problems with OS/2 as if bragging about something. And why a publication such as *Computerworld* would feature an article based on a homebrew PC.

I have installed OS/2 on a number of 386 and 486 systems with various configurations and have had no significant problems.

There is no doubt that problem exist. OS/2 is breaking new ground and is pushing limits in many areas in a very diverse hardware environment. To me the surprise is that, from what I can tell, the extent of the problems is small.

I know there are no fundamental problems that handicap OS/2, as it has proven itself stable and reliable on my systems for several months.

From my perspective, the larger problem is what I perceive as a hostility toward acceptance and support, such as the brag-

ging about OS/2 problems, the lack of diligence in third-party development of driver devices or some of the stories I have seen that are grossly biased, factually contradictory or incorrect.

I hope that the proven experience and the significant sales will, over time, reduce this hostility.

Bryan R. Leijer
Reno, Nev.

The recent letter by Michael Shalloo brought up an interesting issue. Why is it IBM's job to support all third-party devices? Why shouldn't the manufacturer of the add-on product provide its own drivers?

IBM, Apple, Dell or any other computer manufacturer does not have the resources to test and provide drivers for every product manufactured by third parties.

Yes, OS/2 has some problems, and yes, IBM doesn't give you the drivers you want, but if the third-party vendors wanted that product to work with OS/2 they would provide the proper drivers for you.

Let's face it: They know their product better than IBM does.

Wayne Brizzante
Cedar Park, Texas

Computerworld welcomes comments from its readers. Letters may be edited for brevity and clarity and should be addressed to Bill Luberis, Editor in Chief, Computerworld, P.O. Box 9171, 375 Cochise Road, Framingham, Mass. 01701. Fax number: (508) 875-4931; MCI Mail: COM-PUTERWORLD. Please include a phone number for verification.

A decision not worth laboring over

Regarding "It ain't over yet" (CW, Sept. 7), I concur that there is no need to choose between Windows and OS/2, especially with OS/2 2.0. I run Windows programs, DOS 5.0 programs, DOS 4.0 programs under Virtual DOS Machine, OS/2 tasks, local data-

base, remote LAN database and four mainframe systems concurrently without problems. At any time, I have more than a dozen tasks executing without clobbering one another.

V. Venkatakrishnan
Mansfield Center, Conn.

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Object orientation: More than meets the eye

INGVAR PETURSSON

I hear many people referring to object orientation as just another trendy "buzzword." This is generally what happens to any new technology or concept that appears on the scene. In this case, however, I think we are missing a golden opportunity to fundamentally change the way we engineer software and the business practices that drive its development.

Object-oriented development concepts and tools have been around for quite a while in telecommunications. The switches that make up our national tele-

with relatively few mishaps and little retooling of existing services.

These same benefits can now be realized in the way we build our general business applications.

It just makes sense that the creation of libraries of application objects has the potential to dramatically reduce the time and cost of building new applications. The testing required is minimized because only those objects that have been changed need to be retested.

Reusability, application quality and speed of development are all reasons for information services to adopt object-based software engineering. But there are even stronger reasons for the general business side of our organizations to adopt object-oriented concepts. There are a couple of ways that object orientation can improve practices and organizational design:

- **Business processes.** Classical process-flow modeling of a business practice may model a "best practice" in a given area, but it locks the participants into limited ways of achieving the business goal. There is little flexibility for changing the resulting process flow in a dynamic business environment.

Applying object analysis and modeling to a business process identifies the "entities" (e.g., customer or employee) that enable a service to be performed, the "messages" that need to go between them and the "methods" that the entities need to employ to manage their piece of the puzzle.

This leaves a great deal of room for situational customization



James Cameron

tion of the regular business process, making changes in a competitive environment much easier to handle.

• **Empowerment.** Customers of most companies today are looking for individualized attention to special situations. This requires quick thinking and decision-making on the part of employees in the customer contact chain.

When employees are simply part of a larger, strictly defined process, they tend to punt in special situations, sending the customer to a supervisor or another link in the process flow. Customers are left dissatisfied.

Modeling an employee's work as a set of responsibilities, methods, tools and support structures from other entities in the organization enables them to tackle business situations flexibly and

leaves them feeling empowered in their jobs.

The message here is that object modeling does not apply only to software engineering practices. It also applies to the way we model our business practices or organizational structures in order to achieve that ever-elusive goal of customer satisfaction and business productivity.

If we continue to treat object-oriented analysis and design as just another fad, we will miss a golden opportunity to make dramatic and long-lasting improvements, not only in software development but in our business structures.

Petursson is vice president and chief information officer of McCaw Cellular Communications, Inc. in Kirkland, Wash.

ANSI standards should be more widely available

CARL MALAMUD

ANSI standards are expensive and hard to get. That means they're scarce. They're scarce.

The American National Standards Institute (ANSI)—a private organization—is the self-designated central coordinating body for U.S. standards development. In the field of computer networks, technical standards are crucial, defining how we build the open systems that are the foundation for the emerging global network.

The U.S. has always been in the lead in computer networks, and an important, vibrant industry has developed to supply local and international markets. Firms

such as Sun, Cisco Systems, DEC, Synoptics Communications and many others derive billions of dollars in revenue and employ tens of thousands of professionals from the sale of standards-based products and services.

The emerging global network is built on standards. Widepread availability of documents leads to widespread implementation. Problems in the standards are quickly discovered and fixed. Standards in the global network are more than just paper tigers. They define interoperable services that work.

Not all standards are publicly available, though. ANSI charges up to \$10 per page for a large body of copyrighted documents.

ANSI, as the U.S. representative body to the international

standards-making community, has an exclusive license on the sale of many key international specifications, including the crucial Open Systems Interconnect (OSI) standards. OSI documents are sold in the U.S. by ANSI and its licensees for prices of several hundred dollars per inch of paper.

High-priced standards mean college students and young professionals don't read the documents. These documents are a crucial part of their education, and lack of accessibility leads to lack of knowledge.

Access demanded

To demonstrate that there is a demand in the U.S. for ANSI to change its policies and permit on-line, free distribution of standards, a petition was circulated during the last two months.

The petition states the importance of making technical standards freely available electronically and underscores the importance of access to the compet-

itive status of U.S. industry and the education of U.S. professionals. More than 500 computer and communications professionals signed this petition. Employers of almost every significant participant in today's computer and communications industries have signed this petition.

Although the signature of an individual does not necessarily reflect a corporate policy, it is clear that there is widespread support for wider dissemination of technical standards coming from all parts of the production: industry, research and academic communities are all heavily represented.

It is time for ANSI to join the modern world and start using the computer technology its standards help define.

Malamud is the author of *Exploring the Internet: A Technical Travelogue* (Prentice Hall, 1992), a book that, among other things, describes the international campaign to make standards documents more accessible.

Screens exhibiting similar data show the difference between traditional applications (above) and real world applications developed using Sybase's Gain (right).



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COMMENTARY

Christopher Lindquist

Breaking down walls

It can't be easy to be Bill Gates. Sure, he's worth billions. Sure, he can afford Porsche's you can't legally drive in this country. Sure, he can make statements to the effect that wiring one's house with fiber-optic cable isn't really all that expensive. But really, how many of us would like to become the subject of a Berke Breathed cartoon?

And how many of us would really want to be held to the professional standards that Microsoft is held to every day? When you live your life under the eyes of the Federal Trade Commission, jealous competitors and the press, it's no wonder the Redmond crew can seem a little paranoid at times. But then again, maybe they should be.

The latest attack came in the form of undocumented Windows API calls. API calls are necessary. These are the hooks that tell the operating system what to do, such as open and close files and move the cursor.

In Windows, as in DOS and most other operating systems, there are "undocumented" calls that may or may not perform a variety of functions. These are sometimes obsolete versions of current calls, "works in progress" for future versions of the product, or just calls that are not used for much of anything now but that leave space for future development.

Microsoft has long told programmers not to use these calls, and programmers have used them.

Continued on page 41



Database Express for Windows includes more than 40 graphical buttons that initiate program actions

RDBMS targets client/server world

Database enables Windows app development

BY GAREY RAY
CW STAFF

TRUMBULL, Conn. — Users of Database International, Inc.'s personal computer-based relational database management system recently gained built-in access to Microsoft Corp.'s Windows.

The new RDBMS, called Database Express for Windows, includes enhancements to Database's Prism client/server technology and helps users build graphical client/server applications, according to officials.

Database officials said the new version includes more than 40 graphical buttons that can be placed on reports, menus, database forms and tables to initiate program actions.

The buttons support such actions as opening files, running reports and finding database records. Another new feature, the company said, is support for various graphics formats, including Windows BMP, PCK, Tag Image

File Format and PostScript EPS.

The RDBMS also includes the company's Prism technology, as have previously released DOS and OS/2 versions. Prism is a layered database protocol that allows development of client/server applications that can access a number of database types.

Prism incorporates a client application programming interface (API), a server API and the Database Repository.

Several features

Database Express for Windows is shipping with support for Borland International, Inc.'s dBase and Paradox databases, both of which are accessed through a new driver implementing Microsoft's Open Database Connectivity guidelines.

Optional support will ship this year for databases including Oracle Corp.'s Oracle, IBM's DB2 and OS/2 Database Manager and Novell, Inc.'s NetWare SQL.

Database Express for Windows costs \$395.

Microsoft discovers systems integration is a new ball game

BY CHRISTOPHER LINDQUIST
CW STAFF

Microsoft Corp.'s recent attempts to grow up and play with the big boys in the computer market have included announcing that it, too, will join the systems integration and "enterprise solutions" fray with the likes of Computer Associates International, Inc., Digital Equipment Corp., Electronic Data Systems Corp. and IBM.

Whether the shrink-wrapped software giant will be able to compete or will be warming the bench remains to be seen, according to analysts and users.

"They have a lot to prove," said Neal Hill, a senior software analyst at Forrester Research, Inc. in Cambridge, Mass.

Hill described Microsoft's previous mode of business as "build a product, throw it over the wall and wait for people to send you checks. Then you wait for a couple of support calls."

If Microsoft wants to be a systems integrator, that wall has to disappear: The energy needed to hold hands with accounts costs time, effort and profit margins. Microsoft will not be a viable systems integrator, Hill said, "until they're really willing to swallow hard and say 'OK, our profit margins are going to be smaller.'"

Microsoft recently publicly displayed several of its programs aimed at raising its credibility as an enterprise systems vendor (see chart). But simply being willing to make sacrifices does not mean customers will risk their businesses to give Micro-

Battle plan

Microsoft has recently unveiled a selection of programs intended to increase its visibility as an enterprise systems vendor.

► Program that offers customers seven-day, 24-hour per-day telephone access to technical support.

► Hot Site Premier Support under which Microsoft will place a technical support representative on-site.

► Resellers and systems integrators can enroll in the Partner or Alliance programs, which provide development services such as consulting, early access to products, customer support tools and marketing information.

► The Microsoft Development Network CD, which provides technical information for developing applications.

► A variety of electronic services, including expanded forums on CompuServe and increased capabilities of Microsoft's electronic bulletin board.

CW Chart: Michael Rappaport

soft a chance to prove itself.

Microsoft has long been seen as a vendor of shrink-wrapped "commodity" software products. Such an image will be hard to shake when competing with industry-specific software makers, value-added resellers and systems integrators that make a living out of understanding a particular

Continued on page 44

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IN BRIEF

Eo picks partners

■ Eo, a Silicon Valley start-up long reported to be working on a new class of handheld products called personal communicators, finally pulled its head above ground recently when it announced technological partnerships with AT&T and Agence France Matin and Matsushita. There was no word on specific product prices or arrival dates, but Chief Executive Officer Alan Rosenman promised his Mountain View, Calif.-based company will deliver those plans by the end of the year.

■ Platinum Software Corp. is shipping a new integrated client/server accounting package for Microsoft Corp.'s Windows clients and Microsoft SQL Server for OS/2 desktop servers. Called Sequel to Platinum, the software uses the Microsoft/Systems, Inc. SQL Server's stored procedures and triggers to enforce business rules. The first module, a general ledger package, has a base price of \$15,000, not yet available, but will be priced at \$10,000.

■ Microsoft has unveiled a plan it will assist business looking to integrate Microsoft software into their organizations. The first stage of the plan increases support to value-added resellers and integrators that wish to use Microsoft products. The plan, Microsoft Solutions Channels, includes technical support and the chance to participate in the design of Microsoft products.

Security firm targets theft of portables

Hopes to thwart thieves, facilitate recovery of stolen computers with software, nationwide registry

BY JAMES DALY
CW STAFF

SEATAUKET, N.Y. — A security company hopes to make a dent in computer thefts through the combination of a registration service and a software-based identification product.

The International Computer Recovery Center (ICRC) was announced by IDX Technologies, Inc., the security firm, as part of a two-pronged plan to help combat computer theft.

The second phase consisted of the rollout of IDX's Computer Owner Protection (COP) software, an identification code-bearing package that makes computers permanently and uniquely identifiable.

The proliferation of portable computers such as laptops and

notebooks has begun wreaking havoc on the minds of many a computer security officer, says O'Connor.

With 120M-byte hard disks running upward of 25-MHz on 5-pound laptops, portables are a frequent repository for mission-critical tasks and can often carry sensitive data.

Because they allow field access to central computers, portables also provide a perfect way to steal information from a corporate database. Thieves are not only taking laptops to get at the data stored in the disk drive but to dial into company mainframes.

Laptop theft has affected such national figures as U.S. Army General Norman Schwarzkopf and Computer Corp. Chairman Ben Rosen.

"Laptops and notebook computers are God's gift to thieves," O'Connor said. "They're portable, powerful and very easily stolen." But despite the obvious threat, many users are unaware of their vulnerability. In a recent survey by International Data Corp., only 1% of the respondents said they saw security as a problem or limitation of portables.

Help for police, owners
O'Connor said he wanted the ICRC to be the "missing link" between computer owners and the police. The registry will contain ownership information of all registrants with products that are using COP and will also handle serial numbers for computer products that do not incorporate COP software.

A five-year registration costs

\$49, O'Connor said.

When a stolen or lost computer is recovered, law enforcement personnel can call the center and immediately determine the legitimate owner.

Identification of a stolen computer can be facilitated with the \$49 COP package, which gives each computer a unique 11-digit code number.

The software can be installed either by the computer owner or manufacturer. COP software also comes with warning decals that can be attached to the computer to make it a less appealing target for thieves.

IDX is also negotiating with several personal computer makers to have the COP technology installed during the initial assembly process, a company spokeswoman said.

Diverse modems the wave of the future

BY MICHAEL FITZGERALD
CW STAFF

The march of communications technology continues, and it is producing glimpses of what appears to be opportunities for variety in a commodity market.

Modems released recently follow the computer industry trend of smaller, faster and more powerful, while also bringing the brave new world of wireless communications a step closer.

For instance, Motorola, Inc. released its lastTic pocket-size radio-packet modem. Designed to work with any RS-232C-equipped mobile computer, the modem was designed to independently store and send data. InfoTic can serve as a stand-alone messaging tool that transmits wireless messages, and it can be programmed to automatically respond. Stated to be available next month, it will cost \$1,350.

Meanwhile, Racal-Datacom,

Inc., based in Sunrise, Fla., introduced the ALM 3236, a fast-size data/fax modem with cellular capabilities. The ALM 3236 plugs directly into a serial port, with no cables, and operates at up to 14.4 kbit/sec. data. The modem can transfer data via cellular communications and can be controlled

are ready to throw their data on wireless communications because of the lack of integrity of the medium. "Price will."

More conventional modems are also being introduced. QuickComm, Inc. released its Spirit II data/fax modems, which operate at up to 14.4 kbit/sec. QuickComm

MODEMS OF THE FUTURE are smaller, faster, more powerful and wireless.

remotely. It will sell for \$750 when it becomes available next month.

However, analyst Curtis Price at International Data Corp. in Framingham, Mass., said cellular was a future that may demand too much courage from users.

Radio frequency and cellular "is definitely an area of opportunity, but I'm not quite sure if users

in San Jose, Calif., is pricing its modems aggressively: \$249 for an external modem and \$229 for the internal version.

Apple Computer, Inc. PowerBook users can upgrade their modems to a 14.4 kbit/sec. modem made by Campbell, Calif.-based PSI Integration, Inc. PSI released its PowerMod IV, a data/fax modem. PowerBook users can

buy the \$799 PowerMod IV for \$399 through November.

AT&T offered a glimpse of what will likely be the future of modem technology, announcing that it will ship in December a 3.3-volt V.32 bis data pump chip set packaged to fit in a Personal Computer Memory Card International Association (PCMCIA) format. The new product will feature three chips shrunk down to PCMCIA size and will be aimed at the data/fax market. A data pump translates data from analog to digital and vice versa.

PCMCIA-type modems are already on the market, and Megahertz Corp., a modem maker in Salt Lake City, announced it will release two PCMCIA data/fax modems next month: one a 14.4 kbit/sec. modem, the other offering 2.4 kbit/sec. data (9.6 kbit/sec. fax). Both will feature the ability to plug directly into a phone line. Pricing has not yet been determined.

Lindquist

CONTINUED FROM PAGE 37

long ignored them. There are good reasons why Microsoft would like to see the calls unused. For one thing, it makes their support job that much harder. When a new version of, say, DOS comes out, any undocumented calls may conflict with what the new operating system is trying to do. Those conflicts can cause crashes, and the first company to be blamed is, of course, Microsoft.

It's easy to see why. The user simply deduces that a) the old operating system worked fine, b) the program worked fine with the

old operating system and c) the program doesn't work with the new operating system. Therefore, the problem is with the new operating system.

That may indeed be the case, but I suspect that often the problem lies in the fact that the developer of the program used undocumented calls to get his program to do something, and now that little white lie has caught up with him.

Unlikely situation

It's also pretty likely that the vendor is going to come for me and say, "Yes, we use undocumented calls, so our product is likely to be unstable from release

to release of the operating system." That is tantamount to saying, "We're risking our product and your use of it on calls Microsoft told us not to use." It's much easier just to blame Microsoft. Everyone else does, and it's a quote likely you'll be believed.

Now some vendors, including very large ones such as Lotus and Borland, admit to using undocumented calls on occasion, when no other solution seems possible. They even work with Microsoft to find the least risky way of using such calls. So why should Microsoft be held to the fire so much more quickly? There are legitimate reasons.

For starters, Microsoft has to

at least put forth the image that to anyone, including its own employees, gets fair treatment when writing Windows programs. At the very least, using undocumented calls gives the appearance of impropriety.

Secondly, Microsoft has done some things in the past that indicate some rather close interaction between the systems software and applications groups. It can be noted that coincident with the release of Windows 3.1 came new versions of PowerPoint, Excel and Project that took advantage of the new features, such as Object Linking and Embedding (OLE), available in the upgraded Windows. Some vendors, includ-

ing Lotus with 1-3-3 for Windows, do not support OLE to this day.

Microsoft no longer maintains that there is any "Chinese Wall" separating its development groups. And from a legal perspective, perhaps there shouldn't be. However, the legality of the issue may be secondary to Microsoft's building the trust of the customers and vendors who use, rely on and sometimes compete with its products.

In Microsoft's case, the poetry of Robert Frost may have been right: good fences make good neighbors.

Lindquist is a Computerworld West Coast correspondent.

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HELP LINE

Freelance Graphics



Part of a continuing series of tips from personal computer software vendors, based on questions commonly asked of customer support personnel. This week's questions focus on Lotus Development Corp.'s Freelance Graphics for Windows.

Q How can I change the default font that is used in my graphs in Freelance Graphics

for Windows?

A With no graph currently on the page, do the following: Select Graph New and choose any type of graph from the Graph New Gallery list.

Choose any style and select OK. Choose Done. Select Graph, All Text; select the desired default graph font and select OK. Select Graph Replace Defaults. This change will affect

only new graphs created in the current file.

To change the default graph font for any future files, select Tools Save Default Presentation.

Q Can I start Freelance Graphics for Windows without having to see the initial "Welcome to Freelance Graphics" dialog box that appears on the screen?

A From the Accessories group in the Windows Program Manager, select Notepad.

Select File Open, type FLWIN and select OK.

Locate the file in the FLWIN file that reads "Skip Welcome" and change the 0 to 1.

Select File Save. Select File Exit and then restart FLWIN.

FLWIN will bypass the welcome screen and load an unlimited presentation. This new presentation will be opened with the last selected SmartMaster file.

Q How can I obtain a blank page?

A Method 1: If there is no file open, select File New and select NOMASTER.MAS as the SmartMaster file.

This particular SmartMaster file is a blank file that yields a plain white page when loaded. The NOMASTER.MAS can also be selected at startup in the "Welcome to Freelance Graphics" dialog box.

Method 2: If you have a file open and want to insert a blank page, select Page New and choose the Blank Page layout and click OK.

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Microsoft finds new ball game

CONTINUED FROM PAGE 37

ular market niche.

Such is the opinion of at least one customer.

"I think their applications are too limited," said Rory Reed, senior vice president of MIS at Insurance Company of the West in San Diego. "They're not a viable vendor in our market."

Microsoft will have a tough road ahead competing with vendors such as IBM that already have a history of knowing what it takes to please a customer.

"This is the one area where the old-line host systems vendors have a leg up," Hill said. "They know what it takes."

Still in the game

Other users are not willing to dismiss Microsoft yet. "Obviously with Microsoft's track record with success, it's something I'd have to investigate," said Richard Ambrose, information systems manager at Hexcel Corp. in Dublin, Calif. "I'd have to do a wait and see."

Hill is waiting as well. "What I haven't seen yet is a really convincing demonstration that they're willing to do whatever it takes," he said, noting that Microsoft appears to be in a state of flux as it attempts to pin down its long-term strategic direction.

"They have to decide what their core competencies are and focus on those," Hill said.

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PC Tools strives to recover from bugs

BY CHRISTOPHER LINDQUEST
CW STAFF

BEAVERTON, Ore. — Central Point Software, Inc. hopes the release of Version 8.0 will remove the quality stigma surrounding its PC Tools software utilities package.

When Version 7.0 shipped last May, it was soon plagued with reports of bugs in several utilities, the worst of which was failed backups.

As a maintenance upgrade, Version 7.1 reportedly fixed many of the problems, but some users still reported difficulties.

One user who encountered problems, "no more than any other guy," was Don Kugler, a software engineer at Gould American Microsystems, Inc. in Pocatello, Idaho. "I was about tempted to throw it out the window," he added.

Now Version 8.0 has shipped, and Central Point said it hopes a new organization

al structure and improved quality-control procedures will prevent a repeat scenario. Kugler, for one, said he is pleased. "I like it."

Charles Boeseberg, Central Point's president, chief executive officer and chairman, said the company has reorganized to be more focused and structured in its approach to software development.

The number of quality assurance personnel has been tripled, the size of beta-test pools has been doubled, and the way in which software is tested has become far more stringent, Boeseberg said. For example, an automated technique has been added to test multiple system configurations.

In addition, after Central Point co-founder and former CEO Cory Smith's re-

cent departure, the company brought in executives from several large software firms, including Lotus Development Corp., Legend Corp. and Informix Corp., to help manage the company, which had \$84 million in sales last year.

The changes were necessary because the company "had stayed with a recipe that wasn't sensational," Boeseberg said.

Major improvement

At least one user who ran into problems with Version 7.0 has found Version 8.0 to be a great improvement. Loren Nozot, systems manager at Arizona Pacific University, has been a PC Tools user for years but said he was disappointed with Version 7.0 because he had some problems creating reliable backups with the product. "I really think they've done a good job this time," he said. "It's definitely a lot better and more reliable than Version 7.0."

The new version of the product includes support for Small Computer Systems Interface devices, including tape units for backup.

For the corporate user, a systems manager can configure custom versions of PC Tools 8.0, including custom menus and password protection, as well as create a set of installation disks that only install the proper configuration on user personal computers.

Version 8.0 also includes a complete edition of Central Point's antivirus product rather than a "detect-only" version. Drag-and-drop support, a memory optimizer and a task switcher have also been added.

PC Tools Versio 8.0 is available now for a list price of \$179.



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Sony unveils 2-lb. portable CD-ROM drive

BY MICHAEL FITZGERALD
CW STAFF

Sony Corporation of America recently announced its Multimedia CD-ROM Player, which was designed to bring the versatility of multimedia to a handheld package.

The Multimedia CD-ROM Player fits a compact disc/read-only memory extended architecture (CD-ROM XA) drive, an Intel Corp. 8086-compatible processor and an LCD into a 2-pound, 7- by 6- by 2-in. package. It can connect to a television or a personal computer, as well as a printer.

The specialized CD-ROM XA drive allows the player to use multimedia CDs, which can hold approximately 39,000 images, 300,000 pages of text, 70 minutes of sound or 16 hours of compressed digital audio. (A normal CD can hold 74 minutes of compressed digital audio.)

Sony intends to ship the Multimedia CD-ROM Player in November, with a list price of \$999.95 and two multimedia titles. A nickel cadmium battery pack generates up to two hours' worth of power. IBM said that it will sell Sony's product as well.

Among the new multimedia titles announced in conjunction with the Multimedia CD-ROM Player were the first from IBM's Multimedia Publishing Studio, Accis Electronic Publishing, Inc.'s "Zagat-Accis CityGuide" and "The Civil War" from Random House, Inc.

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NEW PRODUCTS

Macintosh products

Strategic Mapping, Inc. has introduced Version 1.5 of Atlas Pro, a geographic information management system.

Atlas Pro 1.5 was designed for the Apple Computer, Inc. Macintosh. Additional enhancements

in this version include extensive connectivity to databases, new tools for zooming and mapping and improved street-level mapping and address matching. According to the company, based on actual location, users can analyze and display information. The software supports interactive querying and a variety of database systems, including DB2 and those from Oracle Corp., Informix Corp. and Sybase, Inc.

Atlas Pro costs \$795. Strategic Mapping Suite 250 4030 Moorpark Ave. San Jose, Calif. 95117 (408) 985-7400

SuperMac Technology, Inc. has released the ThunderLight Color

Graphics card. According to the company, the card enables Apple Computer, Inc. Macintosh color publishing users a 1,200% increase in QuickDraw acceleration for true color graphics on displays of up to 21 inches.

The product supports displays from 12 to 21 inches with resolutions from 512 by 384 pixels to 1,152 by 870 pixels and includes a new SuperZoom feature

that lets users alter resolutions with a hot key when using multi-mode displays. A display management utility called SuperVid controls the process to configure a user's display.

The ThunderLight Color Graphics card costs \$2,399. SuperMac 485 Potrero Ave. Sunnyvale, Calif. 94068 (408) 245-2202

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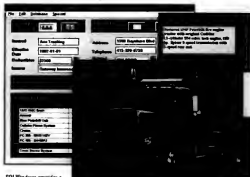
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Software application packages

AddStar, Inc. has introduced SuperStar PRO, an enhanced version of its SuperStar Version 2 data compression software.

Designed to increase disk capacity on personal computers, SuperStar PRO adds Microsoft Corp. Windows-based utilities to improve usability in a Windows environment. A Windows-based Joint Photographic Experts Group, Inc. image compression utility from Optibase, Inc. is included. The product offers an integral disk cache, compatibility with extended memory and password protection. Enhancements to the company's Universal Data Exchange technology have been made, and SuperStar PRO features increased performance over SuperStar Version 2.

The product costs \$149.95. AddStar 1040 Marsh Road Menlo Park, Calif. 94025 (415) 688-0470

Micrograf, Inc. has started shipping Windows OrgChart 2.0, organization charting software.

Windows OrgChart is an updated version of Bayshore, Inc.'s Instant ORGCharting product. Users can automatically create tree diagrams and organization charts.

New features include the ability to implement and save changes instantly, support for object linking and embedding and a fit-to-page feature that allows for the reduction of large organizational charts onto one page and a best-fit specification that can resize all fonts. Windows OrgChart 2.0 has automatic line drawing and box alignment and provides numerous chart configurations.

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WORKGROUP COMPUTING

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U-Haul preps for open systems move

Undaunted by failure of first conversion attempt, firm examines RISC

BY GARY ANTIES
CW STAFF

PHOENIX—Having successfully completed a major project to automate its field operations in the late 1980s, U-Haul International, Inc. is now gearing up for its next big advance in data processing: a move to open systems and client/server computing at its headquarters.

But for now it is back to the drawing board for the world's largest consumer truck rental company, its first stab at client/server an apparent failure.

U-Haul's move to distributed computing was sparked by a mandate from top management to purge the company of its two IBM 3084 mainframes, said Michael T. O'Loughlin, director of systems development. "They said, 'Look at downsizing.' They read the

magazines, too."

With those marching orders, U-Haul's previous chief information officer mapped out a plan that included systems based on Intel Corp. microprocessors running The Santa Cruz Operation's (SCO) Unix. The CIO said that would provide the biggest bang for the information systems buck, which is now a \$12 million annual operating budget and an \$8 million capital budget.

Try again

In a test of the concept, a human resources application was ported to a Tricord Systems, Inc. server with an Intel i486 microproces-

ON SITE

U-Haul International Phoenix

• **Challenge:** To move headquarters' data processing to open systems and client/server environments.

• **Existing systems:** Two IBM 3084 mainframes and Computer Associates' CA-Datcom.

• **Status report:** Pilot project based on Intel i486-based server, SCO Unix and Oracle RDBMS showed poor performance. Considering RISC systems from Hewlett-Packard and IBM running Unix version of CA-Datcom.

sor, SCO Unix and the Oracle Corp. relational database management system. Performance was so poor that U-Haul abandoned the effort. "Oracle said the problem was with Intel and said we should go to RISC," O'Loughlin said.

He said U-Haul had reached the bleeding edge of technology. "The vendors kept saying, 'We don't have any customers doing this, but yeah, it'll work.' We were pioneering with SCO Unix, and there are not enough utilities and tools [available that are] needed for a production environment."

O'Loughlin said U-Haul has pulled back and is now looking at other options, especially reduced instruction set computing (RISC) systems from IBM and Hewlett-Packard Co. The company is leaning toward the HP environment because it will be the first Unix environment for which Computer Associates Interna-

Continued on page 58

Compaq steps into the future with SystemPro/XL

BY MICHAEL FITZGERALD
CW STAFF

Compaq Computer Corp.'s new SystemPro/XL represents a complete redesign of its SystemPro high-end server line that gives it a path into the future. Most users and analysts contacted said they think the future, rather than the present, is where that product fits for them.

The SystemPro/XL, announced last week as part of a massive server announcement from Compaq, was almost lost in the shadow of Compaq's low-priced ProSignia. The XL, as the new high-end server at Compaq, will initially use 50-MHz Intel Corp. i486iX processors, a step up from the SystemPro line it replaces, which topped out at 33-MHz 486DXs.

It will currently support two 50-MHz processors and in the future will support up to four P5 processors, which will give Compaq a legitimate superserver competitor in the performance arena. Beyond that, Compaq expects the same architecture to run at least two of Intel's P6 processors, although these are still in a design phase.

Roll of the dice

"I'm not so sure that the XL is not like betting on the future because that's geared to multiple processors and Windows NT," said Glenn W. Sandusky, vice president and chief information officer at Miller Mason & Dickenson, a benefits consulting company

based in Chicago.

Sandusky's shop uses SystemPro, and he said he wants to move a couple of outlying offices off minicomputers onto local-area networks. But he said the XL might be overkill. He added that he would take advantage of a new 30-day evaluation program from Compaq to put the new machine through its paces.

The XL features Compaq's new TriFlex architecture, which takes the I/O, processor and memory subsystems and gives them their own bus to provide better performance.

Server specs

Under TriFlex, Compaq has a 64-bit processor bus to handle the P5 and future 64-bit chips from Intel.

It also includes a 128-bit memory bus and the 32-bit Extended Industry Standard Architecture bus, and it manages the three subsystems through its new TriFlex DataFlow Manager. A base model is slated to cost \$13,999, including 16M bytes of random access memory and a 550M-byte hard drive.

The XL also gives Compaq and its users the flexibility to change their minds about their server, according to one analyst.

John O. Dundie, president of market research firm Work-Group Technologies, Inc. in Hampton, N.H., said the XL's architecture will let Compaq put in either future generations of Intel chips or reduced instruction set computing chips.



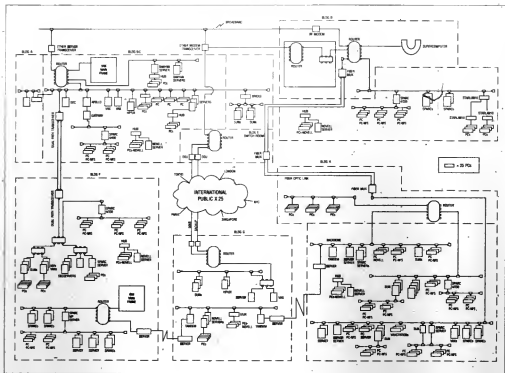
U-Haul automated its stores and is now looking for a client/server system for its headquarters

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By the end of this week Computerworld readers will have spent over \$63.8 Billion on Information Technology this year — representing nearly half of all IT spending to date in 1992.

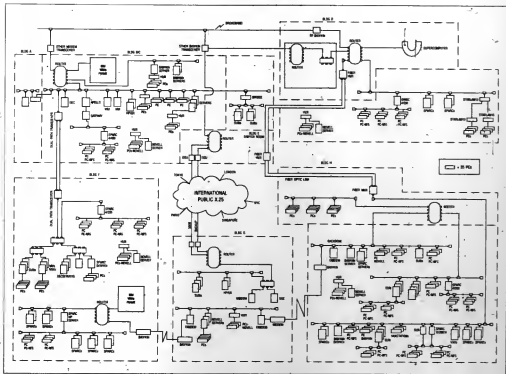
COMPUTERWORLD

Perception.



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Caere's PageKeeper eases image indexing

BY CAROL HILDBRAND
CW STAFF

Caere Corp. took a step toward easier image indexing when it announced PageKeeper late last month.

Demonstrated at the Seybold conference in San Francisco, the Microsoft Corp. Windows-based information management software was designed to help users search through networked personal computers and databases more easily and to retrieve text more quickly.

"Because finding the right information is so important, we designed PageKeeper to find useful

material, not just words. Now, you don't need to enter your information anymore—you just have to ask for it," said Larry Miller, vice president of marketing.

Plugs a gap

Demonstrated the product would help fill a market need that has not yet been addressed.

"We need to get from a world in which the only kinds of things that can be searched on are text and numbers to a world in which any object that can be shared can be accessed without need for excessive human intervention," such as teaching an employee to search on key wording, said Amy

Wohl, a principal at Amy D. Wohl Associates in Bala Cynwyd, Pa.

The company said that information management at the desktop level has not reached the level of the minicomputer and mainframe environments for various reasons: Host-based environments require expensive optical equipment as well as technical specialists to do the searches. The firm opted for Windows to provide a graphical user interface that less experienced individuals would also be able to use.

The software uses automatic indexing, which accepts information without requiring manual entry. It indexes information from files stored on a hard disk to scanned-in printed documents, thus allowing a search on an entire document, not merely certain key words. The built-in optical character recognition software allows users to scan in text and convert



Caere's PageKeeper helps users quickly retrieve and search for text

it to editable form, as well as compress it at ratios up to 50-to-1.

A couple of new retrieval methods first present search results in order of relevance to the original request and reference

tangential documents that may be of interest, the company says.

Pricing is set at \$895 for a single-user or \$1,995 for a five-user license. The product is slated to ship in the fourth quarter.

Integrated support system unveiled

BY CHRISTOPHER LINDQVIST
CW STAFF

Mountain View, Calif.-based ProActive Software, Inc. has announced the shipment of the Support Advantage segment of its Customer Information Resource system.

Customer Information Resource is a set of client/server applications intended to help companies serve a variety of cus-

tomers, from manufacturing to sales and support. Support Advantage is the first piece and is aimed at help desk/product support environments where support staff members are required to collect customer information and utilize it to resolve customer problems.

Sunnyvale, Calif.-based Actel Corp. was handling its support calls the old-fashioned way—with paper and pencil. The writ-

ten information was then sent to a data-entry service every month for entry into the corporate database. "It was a crude fashion of entering information," said Steve Gurkys, technical support manager.

As an early beta-test user of Support Advantage, Gurkys soon found himself appreciating the product. "I'm impressed with [ProActive's] vision," he said. "They really do care about the end product."

Gurkys was also impressed with the product's search speed and flexibility and said that while support people were initially hesitant, that has changed.

Support Advantage allows customer information to be en-

tered into standard SQL databases using a graphical front end. Customer information can then be searched, and problem resolutions can be tracked.

Through Object Linking and Embedding, a variety of image, voice and text information can be attached to a customer record for later retrieval.

Catalog query

In addition, Support Advantage catalogs support information and solutions that can later be searched using a query by example method. In this way, solutions to common problems can be addressed quickly and with minimum duplication of effort.

The product also contains a "work-flow engine" that can be used to send information to appropriate users across a network.

For example, a rule could be defined that automatically sends problem reports about a specific product directly to the product manager.

The interface and operation of Support Advantage can be customized extensively using the ProActive Toolset, which is available separately.

Support Advantage currently runs on Unix using Sybase, Inc.'s SQL Server as a database engine, and it uses Microsoft Corp. Windows 3.1 client systems. It is slated to be available by year's end on Informix, Inc. and Oracle Corp. databases as well as Windows System clients.

Pricing for Support Advantage begins at \$14,900, depending on the number of users and platform supported. The ProActive Toolset begins at \$15,000.

U-Haul goes client/server

CONTINUED FROM PAGE 55

tional, Inc. will introduce its CA Datacom DBMS and its Ideal 4th-generation language. That will make it easy to port applications written in the mainframe versions of those products—about 40% of U-Haul's main-frame code—to Unix, O'Loughlin said.

U-Haul management also directed O'Loughlin to explore outsourcing of mainframe processing as a possible interim measure while a client/server solution is put in place. But he said the odds of doing that are not good.

"There's concern about the security of corporate data," he said. In the meantime, the mandate to get rid of the mainframes has softened, and U-Haul may end up keeping one of them, O'Loughlin said. He said a document inquiry application with a huge database of customer history may require the big box.

Despite its false start toward client/server computing at headquarters, U-Haul is far from inexperienced in the use of networked workstations. During much of the 1980s, U-Haul's rental centers sent U-Haul's informa-

tion to headquarters every day. However, even with 250 people to sift paper and key and correct data, it took U-Haul two weeks to process the information and generate reports.

Unlays to the rescue

To break that logjam, U-Haul installed a network of Uninets Corp. CTOS workstations at its 1,100 rental centers and 78 district offices. Now 110M bytes of point-of-sale data flow up through the regional centers to the data center here every day, while 30M bytes of truck status information is sent back to field locations. U-Haul produces reports in a few hours, and the company has trimmed 300 people from its clerical data processing staff.

Originally installed just for data collection, the distributed system now includes a complete suite of in-store applications all written by U-Haul.

But that spirit of independence has made some employees nervous about the company's reliance on a single vendor. "Management told us not to get locked into Uninets," O'Loughlin said. In response, his staff ported the in-store applications to DOS, but so far the new software remains undisputed—a "research project" that he said gives U-Haul leverage over Uninets when it upgrades the CTOS units.

RISC-based Token Ring chip set debuts

BY MICHELE DOSTERT
CW STAFF

Standard Microsystems, Inc. (SMC), long a power in Ethernet and Arcnet network adapters, has introduced a new line of 16M and 4M byte/sec. Token Ring network interface-cards and Multistation Access Units, based on its own Token Ring chip set.

Previous to SMC's entry into the Token Ring market, vendors consisted of IBM, which used its own chip set, and about 30 third-party vendors, such as Madge Networks, Inc. in San Jose, Calif., and Proteon, Inc. in Westboro, Mass., that used a chip set developed by Texas Instruments, Inc.

However, SMC claimed that its new reduced instruction set computing (RISC)-based chip set will establish new price/performance standards in the Token Ring industry. Benchmarks from SMC show its card equalling the Madge card in performance but having a 33% better price/perfor-

mance score. SMC also promised there will be none of the interoperability problems experienced when Token Ring cards based on the TI chip set hit the market. "We have tested and retested in all possible configurations, and our card interoperates with every other Token Ring card out there today," said Bob Gohn, product manager for Token Ring products.

Elite network cards

SMC's new Token Ring network interface cards, called the Elite-Series 4/16, use two RISC processors to speed throughput on the card. SMC's card also offers the first Token Ring network interface card with a Simple Network Management Protocol agent embedded in the card. This agent is included at no charge in the SMC Token Ring network interface card.

The Elite-Series 4/16 is priced at \$599 per card. "However, we've been careful to build a margin for

resellers into our pricing structure, so the street price of the card may well be considerably lower," said Art Nehr, product marketing manager for Token Ring products.

SMC has no plans to market its chip set to other Token Ring card vendors, although the company said it will probably sell the chip set to builders of high-performance routers and bridges.

SMC's Token Ring cards, available in both Micro Channel Architecture and Industry Standard Architecture versions, are slated to be available through resellers next month.

Analysts were positive about SMC's move into the Token Ring market.

Stan Schatt, senior systems analyst at Computer Intelligence/Infocore in Santa Clara, Calif., said, "They've added value with their SNMP agent, and their low price could really shake up the Token Ring market, which needs it."

External wireless adapter released

BY ELLIS BOOKER
CW STAFF

SAN DIEGO — The industry's first external wireless network adapter for IBM-compatible computers was released recently by data communications products company Soletek Corp.

Unlike other wireless local-area network systems now on the market, the 4-by-7-in. Soletek AirLAN adapter does not require an internal card. It attaches to the parallel port of a desktop or portable computer.

The system was jointly developed with NCR Corp. and is compatible with NCR's WaveLAN, a spread-spectrum, wireless LAN that NCR began shipping to customers in late 1990.

The market for wireless LANs as replacements for conventional office LANs has been minuscule, according to Ira Brodsky, president of Datacomm Re-

search Co. in Wilmette, Ill.

"Most of the market isn't in the office; it's been in environments like retail stores and warehouses," said Brodsky, who estimated that total sales of wireless LAN gear this year will be \$260 million.

Significantly, however, Brodsky said he believes \$215 million of this market represents portable applications in which "wireless is essential for adding mobility."

Portia Isaacson, president of Dream IT, Inc., an information systems consultancy in Colorado Springs, said she sees increasing interest in wireless office LANs as portables become more

prominent in white-collar settings.

"My little company, like a lot of others, has quite a few notebook computers, but there hasn't been a way to interface them with WaveLAN," said Isaacson, whose company recently installed the NCR wireless network.

WaveLAN-compatible

Isaacson also said she was excited that the Soletek device is compatible with WaveLAN. "One weakness of wireless technology today is that all the systems are proprietary," she said.

An NCR spokeswoman would not com-

ment on the company's own timetable to bring forth next-generation WaveLAN products targeted at mobile workers.

"We can say that NCR customers want wireless for desktop and portable platforms, and we realize we have to offer a solution for in-building roaming," she said.

The AirLAN adapter, which complies with the IEEE 802.3 Ethernet standard, runs at speeds of up to 2M bit/sec. at distances up to 400 feet, according to Soletek. The adapter will ship in December from retailers and distributors at a suggested retail price of \$899.

Soletek also promised future products, including a Personal Computer Memory Card International Association (PCMCIA) 2.0 version to coincide with the introduction of laptops using PCMCIA 2.0 cards.

Lotus ships CD-Netwoker

BY ROSEMARY HAMILTON
CW STAFF

Lotus Development Corp. began shipping a software tool late last month that allows users on a local-area network to share applications stored on compact disc/read-only memory (CD-ROM).

The company also announced plans to deliver its core applications via CD-ROM.

"We see a need from the standpoint of a software publisher to start using this medium," said David Newbold, product line manager at the Lotus One Source group. "Some of our applications are pretty complex, and convenience is a major thing [to customers]."

Lotus CD-Netwoker 4.1 is the first version of this software tool made available to the general market. Previous versions were offered to users of the company's One Source financial data service.

The software allows users to access data and applications from a CD-ROM drive. The company will also offer a stand-alone version, but the networked version provides multiple users simultaneous access to up to 26 CD-ROM drives per server.

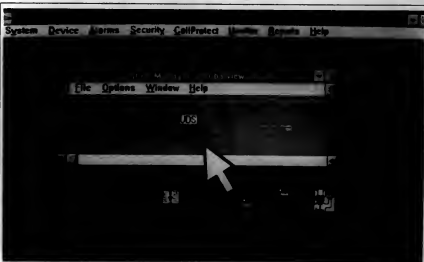
Lower cost

"It will address the cost-per-seat issue, having lower incremental costs because you don't need a CD per user," said John Douvan, a senior analyst at WorkGroup Technologies, Inc. in Hampton, N.H.

Newbold said users need to license the server versions of applications for use with CD-Netwoker. Some application code will then reside on the workstation, while the "high-density stuff, like Help, is on the CD-ROM."

Michael Bragen, president of Business Management Consulting in Lexington, Mass., said, "Now that the technology is available, the imagination of users will be captured and that should start to drive demand."

CD-Netwoker carries a list price of \$996 per server, regardless of the number of workstations.



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Source: 1992 ComputerWorld/I/S Brand Preference Study

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NEW PRODUCTS

Local-area networking hardware

Proxim, Inc. has introduced RangeLAN/PCMCIA and RangeLAN/Parallel, wireless local-area network adapters.

The products were designed

for applications such as terminal emulation, electronic mail and file, printer- and modem-sharing.

According to the company, RangeLAN/PCMCIA fits into a Type II credit card slot of notebook, subnotebook, palmtop or pen-based computers.

RangeLAN/Parallel provides wireless connectivity to any per-

sonal computer when it is connected to the parallel port.

RangeLAN/PCMCIA and RangeLAN/Parallel cost \$595. Proxim 295 N. Bernardo Ave. Mountain View, Calif. 94043 (415) 960-1630

Artisoft, Inc. has started shipping EtherBasket, a multipack of 12 Artisoft AE-2 or AE-2/T Ethernet

adapters. According to the company, the AE-2 adapter supports thick and thin coaxial cables. The AE-2/T adapter supports thick coaxial cable and 10Base-T cable.

Both products are 16-bit adapters that offer 100% compliance with IEEE 802.3 Ethernet standards.

The EtherBasket costs \$2,999. User manuals and two driver disks are included in the

package.

Artisoft
691 E. River Road
Tucson, Ariz. 85704
(602) 293-6363

Local-area networking software

GigaTrend, Inc. has started shipping MasterSafe Enterprise, high-performance tape backup software that backs up and restores multiple local- and wide-area networks.

The product uses communications technology that was designed to comply with Novell, Inc.'s Storage Management Services architecture and backs up data over Token Ring, Ethernet, ArcNet and fiber-optic topologies, the company said.

Network backups and restores are executed at a tape station on the network rather than at a file server or workstation.

The software kit costs \$2,995.

GigaTrend
2234 Rutherford Road
Carlsbad, Calif. 92008
(619) 931-9122

Workgroup software applications

Tallgrass Technologies Corp. has announced support for heterogeneous operating environments by adding Apple Computer, Inc. Macintosh and Unix agent options to NetSecure, its server-based Novell, Inc. NetWare Loadable Module (NLM) network backup solution.

Tallgrass said NetSecure was designed to integrate into the NetWare operating system to give the user flexibility, maximum performance and high-level security.

Users with The Santa Cruz Operation's Unix System V, Release 3.2 and Macintosh workstations running System 6.05 and above can now receive workstation agents provided by NetSecure. The agents enable the product to back up and restore local Macintosh and Unix workstation hard drives.

The Macintosh and Unix NLM options cost \$495 each.

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IN BRIEF Global net agreement

■ Six international telecommunications carriers have signed a Global Networking Project agreement under which each carrier will contribute capacity on its undersea fiber-optic networks to provide a worldwide, shared-facilities network. As a result, each carrier will be able to access capacity on the shared network on a more flexible, as-needed basis for restoration of service after a network failure or to meet sudden unanticipated swings in user bandwidth demand, the consortium said.

The six carriers are AT&T, BT, Deutsche Bundespost-Telekom, France Telecom, Australia's OTC and Japan's Kokusai Den-shin Denwa.

■ Ingram Micro, Inc. will begin distributing Reach Software Corp.'s electronic mail products in North America this month, Reach said last week. A joint promotion provides resellers with free trial, 10-user versions of Reach products when purchasing Novell, Inc.'s NetWare Version 3.11.

Seeking help in overseas networking

Telecom users explore their global network outsourcing options at Yankee Group conference

BY ELISABETH HORWITT
CW STAFF

NEW YORK — No one came up with a universal definition for network outsourcing at the recent Yankee Group Global Network Strategies conference. However, telecommunications managers agreed that they would love to turn the grunt work of provisioning, managing and supporting their overseas networks over to someone else. The problem is finding the right carrier, or consortium of carriers, to do it.

"U.S. multinationals are investing in global networks during the '90s the way they invested in domestic networks in the '80s, spending about 20% of their communications budget" on expanding networks overseas, said Berge Ayzan, vice president of communications research at The Yankee Group.

According to Ayzan, such companies require the following types of help for their global networks:

- High quality, reliable circuits that do not deteriorate once they travel beyond major metropolitan areas.
- A single point of billing that takes one kind of currency.
- Trouble management and restoration of circuits.
- Coordination among and inter-operability between carriers.

In addition, such companies strongly desire — if not require

— rapid service delivery, service-level guarantees, value-added customer services and reduced operational costs, Ayzan said.

However, cost consideration was the least important criterion for choosing a global network provider, according to a recent Yankee Group survey of 68 U.S.-based multinational companies. The top priority was compression

of lead times for deploying new circuits and services.

Users and analysts agreed that it is now virtually impossible for multinational firms to get all their global networking needs met by one carrier or even by one of the recently formed carrier consortiums.

General Electric Co., for example, is meeting a broad range

of user needs and applications by implementing a combination of Integrated Services Digital Network, frame relay, Asynchronous Transfer Mode and inverse multiplexing, delivered by several different carriers, according to Barry Volante, program manager of telecommunications planning.

Berry of choices

Many carriers such as AT&T, Sprint Corp., MCI Communications Corp., Inlandnet and BT have introduced a range of outsourcing-like services, including management and maintenance of users' networking equipment, one-stop billing and one-source troubleshooting of multicarrier network problems.

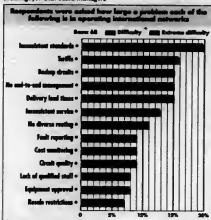
"Is this network outsourcing?" Ayzan asked at the conference. "No one is running your mainframes; there is no transfer of personnel. But the carriers are managing your networks."

A growing number of multinationals are opting in, or are at least considering, some form of global network outsourcing, according to Yankee Group senior analyst Robert Wiggins. It offers a chance to downsize or even eliminate overseas telecom staff, as well as offload the hassle of dealing with a dozen foreign carriers, each with its own currency and language. Wiggins pointed out. Furthermore, users are encouraged by seeing companies

Continued on page 72

Standard complaints

Differences in standards throughout the world present the biggest challenge for U.S.-based managers



Source: The Yankee Group

CW Chart Michael Siggis

Great expectations for multimedia courtship

BY JOYANNE M. WEXLER
CW STAFF

CHICAGO — Multimedia networking has come to the fore.

Great Expectations, Inc., which claims to be the largest dating franchise in the country, is integrating its 135,000-member database with photographs and profile of would-be partners. They then plug in a videotape containing multiple videos that members have recorded to introduce themselves, fast-forward to the prospect of their choice and view a

graph and introductory videotape from a networked, in-office workstation, said Jim Ditkowsky, senior marketing representative at the Chicago site.

Going "Platinum"

The Great Expectations service, called "Platinum," has contributed to the Chicago office's 25% increase in dollar sales since the system went live last fall, he said. Platinum is running in nine of the company's 43 locations.

Most dating services require members to consult a blinder containing photographs and profiles of would-be partners. They then plug in a videotape containing multiple videos that members have recorded to introduce themselves, fast-forward to the prospect of their choice and view a

full-motion video of their potential date on a television screen.

Great Expectations also offers this approach for a lower membership fee. But singles apparently have less time these days to spend on screenings, dates and fumbling with paper and VHS cassettes.

"We're seeing more shoppers for dating services and more competition," Ditkowsky said. "But as soon as a shopper sees Platinum, they sign right up with us." About one-third of Great Expectations' Chicago-area members have gone Platinum.

However, Great Expectations founder and President Jeffrey Ullman said he is ambivalent about automating a business that hinges on emotions. "I'm both intrigued and terrified," he said. "While Platinum can be a time-saver to our busy members, the potential detriments are that it may overemphasize the visual in

lieu of other qualities."

Houston software developer Dataseek, Inc. provides the database management, application, digitizing, compression, networking and storage services for "hundreds of gigabytes of data" to the dating service's local offices, said Mark Everding, Dataseek president.

Dataseek keeps a mirror version of Great Expectations' long-coming high-speed digital public network — Dataseek will be able to update the servers remotely.

Ditkowsky is looking to ISDN to allow him to offer Platinum to members in their homes, as well as other services such as real estate and job searches, limited "only by the imagination," he said.

The Dataseek application runs on top of Protonet, Inc.'s VideoComm video server software, which is a Novell, Inc. NetWare Loadable Module. The underlying LAN is Thomas-Conrad, Inc.'s proprietary 100M bit/sec. Arcnet-based Thomas Conrad Networking System.

Each videotape consumes 6M to 12M bytes of storage. Dataseek has daisy-chained 1.7G byte disk drives together in each MS-DOS-based LAN server to store 106 bytes of videos locally, Ditkowsky said.

The videos are stored locally because T1 lines between sites are too expensive, and just one video at a time can run over a T1. Everding said. In addition, high LAN speeds are needed for TV quality, he explained.

However, sites within a region — such as three in Chicago, suburban Schaumburg, Ill., and Milwaukee — are networked via low-speed lines through a Dataseek host for exchanging data requests and responses.



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Dolphin monitor gains error troubleshooting

BY ELISABETH HORWITT
CSTAFF

NORCROSS, Ga.—Dolphin Networks, a division of Digital Technology, Inc., has enhanced its line of network management tools with Dolphin Expert System Protocol (ESP), a family of network protocol analyzers that are said to provide real-time monitoring and analysis of local-area network traffic and error events.

Dolphin ESP reportedly incorporates an expert system that automatically troubleshoots problems on Arcnet, Ethernet or Token Ring LANs. The product consists of a DOS-based software program and a customized 16-bit industry Standard Architecture card that monitors one of the above network topologies.

The products can analyze seven network protocols, including Novell, Inc.'s IPX/SPX, Transmission Control Protocol/Internet Protocol, Banyan Systems, Inc.'s StreetTalk, Apple Computer, Inc.'s AppleTalk, Open Systems Interconnect and NetBIOS, Dolphin said.

The network manager can set the product to "trigger an alarm when it sees an error of a particular type," said Dolphin spokesman Philip Kim. The alert is forwarded to the network management platform, where it is dis-

played on the screen; the platform can then take control of the remote protocol analyzer to determine the source of the problem, Kim said. The expert system can provide diagnosis and suggestions to the user.

Triggers can be based on Media Address Control addresses,

protocol type, frame size, bad frames and user-defined patterns, the company said. The Arcnet version is priced at \$995, the Ethernet version at \$1,495 and the Token Ring version at \$1,995.

In addition, Dolphin expects to release in first-quarter 1993 Dolphin ESP Plus, which will

come on its own portable personal computer, the company said. The PC will be configurable with two cards to concurrently support analysis of two types of LAN topology, Dolphin said. The system will also support Fiber Distributed Data Interconnect, Token Ring and Ethernet, with an

optional \$495 Arcnet card.

In addition, one ESP Plus station will be able to send traffic across a wide-area network link to another station, with both stations reporting their analysis of the packets being sent, Kim said. This will allow network managers to pinpoint a trouble source that is changing the packets en route, he added.

ESP Plus will cost \$29,995.

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NEW DEALS

DOE, Sprint to help lab

■ The Department of Energy and Sprint Corp. have announced a program to upgrade the University of California Lawrence Livermore National Laboratory data network. Under a \$50 million agreement, Sprint will provide Asynchronous Transfer Mode (ATM) service, and TRW Electronic Systems Group will provide 11 ATM switches handling speeds of up to 622M bit/sec.

■ BT's Global Network Services (GNS) and Syncordia network outsourcing subsidiaries will work on a three-year contract to provide a British Petroleum Co. subsidiary, BP Chemicals, with a global network. GNS will link BP Chemicals' sites to a backbone network, managed by Syncordia, that will stretch across 20 countries. The contract is valued in the millions, BT said.



Proginet claims IBM-OSI price edge

BY ELISABETH HORWITT
CHICAGO

UNIONDALE, N.Y. — Help is on the way for users who would like their IBM hosts to exchange files with other vendors' systems via Open Systems Interconnect's

(OSI) FTAM protocols but who are put off by the \$300,000 price tag of IBM's OSI Communications Subsystem.

Proginet Corp. last week introduced Host.FTAM, an implementation of OSI File Transfer, Access and Management (FTAM)

on IBM MVS/ESA hosts that provides more file-transfer functionality than IBM's product, at prices beginning at \$85,000, according to Proginet spokesman Brian Berns.

Proginet will coannounce its product with Novell, Inc., and the

two vendors will guarantee interoperability between Host.FTAM and Novell's FTAM product, Berns said. In addition, Proginet is currently working to test interoperability between its product and FTAM software from companies such as Tandem Computers,

Inc., Hewlett-Packard Co. and Digital Equipment Corp., he added.

Proginet is talking with IBM about possibly making Host.FTAM available through OEMs or integrating it with IBM products, according to sources close to Proginet.

Proginet Vice President Joe Mohen said the firm will initially target government organizations and contractors that are moving to OSI under the Government OSI Profile as well as international organizations that need to communicate with Europe, where OSI is mandated by many governments.

Daily recommendation

The U.S. Department of Agriculture (USDA) currently uses IBM's FTAM product to enable IBM hosts to exchange files with Data General Corp. and Unix systems, according to Doug Harsha, a computer specialist at the Fort Collins, Colo., agency.

FTAM provides certain features that the Transmission Control Protocol/Internet Protocol's File Transfer Protocol counterpart "simply doesn't have," Harsha said.

However, current vendor implementations, including IBM's, lack some of FTAM's richer features — in particular, a "very important" Checkpoint Restart feature that enables a system to pick up a file transfer where it left off after an outage, he added.

Proginet's Host.FTAM reportedly supports the recovery feature. The USDA is awaiting documentation in order to evaluate the product, Harsha said.

International trial

The Boeing Co. also plans to evaluate Proginet's Host.FTAM, according to Laurie Bride, manager of communications technology at the aerospace company's computer services division. As an international company, Boeing wants OSI's ability to provide a common scheme for addressing users on a global basis. "Plus OSI has a general richness of services," Bride said.

Boeing installed IBM's OSI Communications Subsystem last fall but has no plans to use it in production "at this point in time," she said. She would not offer an explanation. Like the USDA, Boeing is "particularly interested" in Host.FTAM's Checkpoint Restart feature, Bride said.

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Frank Russell eases into outsourcing with BT

BY ELISABETH HORWITT
C.W. 5/3/97

TACOMA, Wash. — Where some companies jump into network outsourcing with a splash, Frank Russell Co. slipped into its outsourcing deal with BT gradually, over a period of years.

The financial services company began using BT North America, Inc. in the late 1980s, when it was still Tymnet. "We had no big applications" to cost-justify Tymnet's X.25 packet-switched services, said Bill Branson, a senior network engineer at the Tacoma, Wash., financial services

company. When Tymnet offered to "do a pilot and keep the costs down," Frank Russell took a chance.

This began paying off as users started realizing the advantages of using the global X.25 connections for electronic-mail exchange, particularly with sites in Australia and other parts of the globe where telephone calls are hard to set up. Branson said. The company has already cost-justified its X.25 network service on E-mail alone, he added.

X.25 connections cost about 40% less than a star configuration of 9.6K bit/sec leased lines that radiate out from head-

quarters to remote sites, according to Branson.

The core drawback of Tymnet services was that connections to other countries involved X.75 gateways between Tymnet X.25 links and foreign carriers' X.25 networks. Those gateways "had a performance problem," Branson said.

Then, in 1990, BT approached Frank Russell with its Global Network Services offering, under which the UK-based carrier acts as a single point of contact and coordinator of customers' global networks.

"We liked it; it offered easier coordination and management" of links to various parts

of the world, Branson said. "The local PTT connections became invisible."

Later on, the financial services firm took another chance: that BT's Synchronous Data Link Control (SDLC) service would be reliable enough to justify getting rid of an IBM 9370 host in London, leaving London users dependent on a SDLC-based connection to the Tacoma host. This, too, paid off, enabling Frank Russell to realize substantial cost savings by eliminating maintenance and lease costs of the midrange host, Branson said.

"When I first joined the company I thought, 'We're paying too much. We could install our own equipment,'" Branson recalled. "But with BT we don't need to deal with PTTs on an ongoing basis; and I don't get calls in the night like I did with another global company."

Letting BT run its network has saved Frank Russell from hiring telecommunications people to do the job, freeing up some money to hire people it really needs, such as capable local-area network managers, Branson said. Global network outsourcing makes sense because most X.25-based wide-area networks require the same basic management skills, no matter what industry sector the user happens to be in or what the configuration happens to be, he added.

In contrast, LANs go all the way up to the application layer, which is extremely industry-specific and product-specific, Branson said. Value-added resellers may be technically expert, but they tend to be tied to a particular product, "either because they are in with some vendor or that's where they have experience," he added. "You have Novell, and they say, 'You really ought to have [Microsoft Corp.'s] LAN Manager.'"

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AT&T Tridom

Seeking help for overseas nets

CONTINUED FROM PAGE 45

such as J. P. Morgan & Co., Unilever Corp. and GE win impressive concessions in outsourcing contracts. "J. P. Morgan chose BT because BT was willing to customize and agree to cash penalties" if certain service levels were not met, Waggon said.

With outsourcing just beginning to emerge, it is up to users with clout to pressure the carriers to meet their needs, Volante said.

"Some years ago, a vendor told us, 'Your U.S. network needs 40 nodes.' I said, 'Nobody needs 20; here's a traffic report.' They replied, 'It still needs 40 nodes' — but that was based on where their nodes were. They were trying to make our applications fit their network."

Alday Corp., a Seattle-based publishing and presentation software company, runs all of its internal applications across a global client/server network, said Don Moore, manager of communications technology.

"We decided we couldn't outsource the whole process, but we wanted on-stop shopping: that is, end-to-end service where the carrier takes 100% responsibility for the links with a single point of billing for local and interexchange services."

Tips that Moore gave to The Yankee Group audience included, "never buy on price alone; never buy something that is not available yet; and never sign a large order, even if discounts are offered for big commitments."

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COMMENTARY

Jean S. Bozman

The next generation



A new generation of relational databases will be able to trace data to one another across the world and not drop a bit of it.

Those products will be widely available in 1993 from a number of RDBMS vendors. But users know that building distributed databases will not be as easy as playing building blocks with a shrink-wrapped box. They know that the trick to distributed databases is not features and functions. It is management and common sense.

Thus, it will become a matter of style whether an IS organization moves quickly to adopt distributed databases or decides to let others be the puffers. Some, concerned by the complexity involved in multiple updates, have elected to wait.

"There are no rules and no exceptions you can follow," noted Jean Lee, project manager at AT&T's Distributed Computing Group in Piscataway, N.J. "It's an open game."

Potential roadblocks

The potential complexities of truly distributed databases — not to be confused with distributed data processing — are many. Each database server in a network of geographically dispersed servers must be advised of changes in other databases. Two or more servers must vote, through a process called two-phase commit, on whether or not to accept the updates.

Continued on page 79

Weather drives Burpee to outsourcing

Seasonal business surges lead to inefficient use of processing power, prompt seed firm to hire CSC

BY MARK HALPER
COWLEY

WARMINSTER, Pa. — Add a winter storm on the vicissitudes of nature to the primer on outsourcing.

No, this is not another natural disaster story. Rather, it is a tale of why the weather prompted one business to hand over its data processing to a computer services company.

For W. Atlee Burpee & Co., business is brisk three months out of the year, when it fields mail-order and wholesale requests for its line of seeds and gardening products.



Troll negotiated the outsourcing deal for Burpee

From January to March, as gardeners nationwide prepare for blossoming spring and bountiful summers, the company has typically kept its IBM 4381 mainframe humming, logging a steady stream of orders, balancing inventory and tracking invoices and revenue.

But as business slows to a trickle for the remainder of the year, Burpee has always been left with vastly underused processing power.

And although mainframe use will be at its lowest from April through December, Burpee nonetheless has to continue making full monthly lease

payments. It also pays five computer operators and technical managers on a full-time basis even through the lean months.

So the company decided last month to rip its Warminster data center in the bud and hire an outsourcing, El Segundo, Calif.-based Computer Sciences Corp. (CSC), to plough its processing fields for a per-use fee.

"Fixed costs in a seasonal business can significantly eat into profits," explained Chris Troll, who negotiated the deal for Burpee while he was vice president of operations. Troll left earlier this month when he purchased Haverford Elec-

tronics in Philadelphia.

"We needed the equipment for three months; we had it here for 12 months," said Joseph J. Forie, who is remaining with the seed vendor as director of information systems.

The outsourcing contract, which came as part of a companywide initiative to reduce costs, takes effect Nov. 1, when Burpee plans to pull the plug on its leased 4381 and cut over to a CSC data center in Niles, Ohio.

The data center is run by CSC CompSource, a CSC subsidiary that specializes in providing pro-

Burpee's Forie is overseeing inventory management system

Users like SAP future but focus on today

BY JOHANNA AMBROSIO
COWLEY

SAP America, Inc.'s largest North American customers applauded the software vendor's release of its client/server applications, even though many of them said they have no immediate plans to implement them.

Some components of the client/server system, called R/3 and available in Europe since July, are now ready for the North American market. The software will eventually include a suite of manufacturing and financial applications that will mirror the functionality of the Lester, Pa.-based vendor's R/2 packages,

which run on IBM mainframes.

The initial R/3 applications cover financial and fixed asset accounting, materials management, sales and distribution and human resources. A second R/3 release, to be delivered in mid-1994, will include production planning, quality assurance, plant maintenance and other functions.

R/3 runs on Unix-based computers from Bull-IBM Information Systems, Inc., Digital Equipment Corp., Hewlett-Packard Co. and IBM, as well as systems based on DEC's VMS and HP's MPE-X platforms. The software is priced at \$40,000.

But many of SAP's North

American customers said at a recent user conference in Orlando, Fla., that they are not ready for the client/server software. In fact, most said they are still working to install SAP's mainframe software in their sites worldwide.

Future consideration

"When it makes business sense, we will consider R/3," said Robert Strickler, manager of administrative information systems at Eastman Chemical Co. in Kingsport, Tenn. "But we are not changing direction right now, and our priority is to get R/2 installed."

"R/3 is still out in the future," Humphrey said, "but we want to understand it and see where it will fit within Kodak."

Ron Crumpler, project director at Dow Chemical Co. in Midland, Mich., agreed. "I'm very interested in it, but I can't say when I'll be getting to it. My hands are full right now."

Andrew J. Harris Jr., director of applications at Du Pont Co. in Newark, Del., said, "I'm excited about R/3 as a direction, and it's certainly in our future, but our

test site that also helped develop the software — is still 'experimenting with R/3 to see how we will use it,' said David Humphrey, Kodak's SAP team leader. The most likely initial application, according to Humphrey, will be to replace 30 IBM System/360 minicomputers with Unix-based boxes in international locations, including Chile.

"R/3 is still out in the future," Humphrey said, "but we want to understand it and see where it will fit within Kodak."

Ron Crumpler, project director at Dow Chemical Co. in Midland, Mich., agreed. "I'm very interested in it, but I can't say when I'll be getting to it. My hands are full right now."

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CONTINUED FROM PAGE 77

Oracle's new Oracle 7 database was designed to handle that, as can competing products from The Ask Cos.' Ingres Products Division, Sybase, Informix Software, DEC and Hewlett-Packard, among others.

Then there is the matter of network reliability and how to handle data errors. IS managers should think about carrying out such updates synchronously — all at once — or posting the changes throughout a 24-hour day. The amount of network traffic generated by such updates must also be considered, just as the user must think about what the content of the local databases will be.

Then there's the matter of which server is the "master" server and which time zone should be the reference point. Some users have chosen Greenwich Mean Time; others have selected the time zone of their corporate headquarters.

The level of complexity can be reduced, however, by selecting some servers that must be updated at once and leaving the other servers alone. Oracle 7's "soapbox" facility, for example, will allow users to create a time-delayed update of changes to the master database.

On the fence

Some users will watch the first wave of distributed servers roll out before making any hard and fast conclusions about the technology.

At AT&T, Lee is putting multiple databases in a single place — his computer room. He intends to install Oracle's parallel server option, which lets multiple copies of Oracle 7 on two to four Unix machines share the same disk drives. That way, many applications will share the same Oracle database and the database will not fail if one of the Unix machines stops.

Another Oracle parallel server site analyzed it this way. The value of distributed databases, or cooperating database servers, really depends on the kind of business you're in. An international or manufacturing firm has many sites around the world that must keep track of the same set of products and prices. But users with many applications who must share the same data may prefer a centralized approach and the IS controls that come with it.

That's where IS skill and analysis come in. Said Michael Higgins, a technical support manager at Bayer California, an Oracle 7 shop: "Everybody who has two or more machines faces the same fork in the road: to go distributed with two-phase commit or to get everything into one big database." The great thing for users is that there are now a lot of RDBMS vendors that are prepared to support either scenario.

Bozman is Computerworld's West Coast senior editor.

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Users like SAP future

CONTINUED FROM PAGE 77

first priority is getting the R/2 foundation right."

Some customers are planning to implement R/3 as an adjunct to the mainframe software. "We will follow SAP to R/3, but it will operate under R/2," said Richard Avery, director of MIS at Cooper Industries, Inc. in Houston.

Market leverage

Nevertheless, SAP executives said they are looking to R/3 to open markets that have heretofore been closed to the company, especially at midsize user organiza-

tions. "We hope to do in one year with R/3 what we did in many years with R/2" in revenue, said Hanso Plattner, SAP's deputy chief executive officer.

Although he declined to give specific sales expectations, he did say the company was hoping for an R/3 user base in the three digits by the end of next year. So far, the company has 2,300 customers worldwide for its R/2 system. Plattner also said that SAP expects to derive between 20% and 30% of its total sales from R/3 by the end of next year.

There are approximately 70 R/3 sites

in Europe, primarily in Germany, the headquarters of SAP America's parent company. There are some 10 beta-test sites in North America, and virtually all of them run pilot applications. Plattner said. At least half of the total R/3 customers to date represent new business for SAP to be added.

The company will also release OS/2-based R/3 software, he said, and will soon improve the graphical user interface. By 1993, SAP plans to have an easy migration path for customers that want to switch from the mainframe software to the client/server version.

Additionally, SAP has committed to enhancing the R/2 software, at least through the end of the decade. This will include a new, more graphical user interface, according to Plattner.



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Weather drives Burpee to outsourcing

CONTINUED FROM PAGE 77

...crossing to small to medium-size companies.

Burpee plans to retain its computer operators until Nov. 6 to cover possible slippage in the cut-over. The company is simply transferring tapes from its leased 4381 to a CSC 4381 in Niles, ac-

cording to Troll.

Troll estimated that Burpee will spend roughly \$1.8 million in processing fees during the five-year life of the contract, a figure that will halve the company's fixed processing costs. The in-house 4381 has cost approxi-

mately \$800,000 a year to lease and operate. Burpee will stop paying those fees when the machine's lease expires at the end of this month, Troll said.

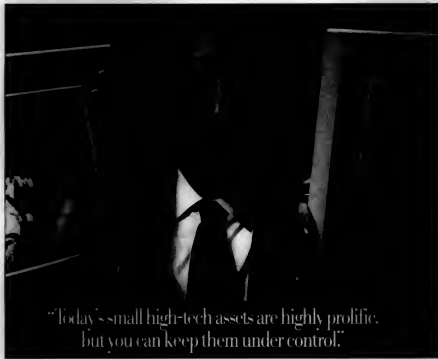
The 4381 has been operating at about 80% capacity from January through March and at about

20% capacity during the remainder of the year, according to Troll.

The company will continue to spend about \$700,000 a year updating and maintaining software, according to Troll. IS director Forte will continue to oversee a five-person application development and programming staff. He is also in charge of overseeing a new local-area network-based inventory management system.

According to Troll, Burpee weighed outsourcing proposals from other vendors, including Andersen Consulting. "It came down to a relationship," he recalled. "When we got together with Computer Sciences, we felt real comfortable."

"With the others, it was a feeling of once we got there, we wouldn't have a say anymore," Forte said.



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While it was changes of a seasonal nature that prompted Burpee to turn to CSC for an outsourcing solution, shifting winds of another type played a role in how the deal was structured.

Specifically, the five-year contract includes an option for Burpee to back out of the arrangement after three years. Burpee said it wanted the walk-away clause because of uncertainty over future strategic and computing directions owing to Burpee's recent acquisition by George J. Ball, Inc., a large Chicago-based commercial seed provider.

"In case we do have a change in strategy, I'd like a way out of this," said Chris Troll, who negotiated the deal for Burpee while he was vice president of operations.

Troll said the acquisition was also a factor in Burpee's decision to limit the accord to five years. It is not uncommon for outsourcing contracts to run seven to 10 years.

"Whenever you're acquired by another company, it's difficult for anyone to look in a crystal ball and say, 'Everything will be the same in 10 years,'" Troll said.

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DEC takes first steps in storage strategy

BY MELINDA-CAROL BAILLOU
CW 12477

Digital Equipment Corp. recently announced the first products for its modular storage strategy: two new Hierarchical Storage Controllers (HSC) that support Small Computer Systems Interface-2 (SCSI-2) via new channel cards.

"The real message behind this is that we are extending storage functionality and price/performance advantages to high-end customers with the new modular subsystems," said Susan Heon, a mass storage marketing manager at DEC.

"You'll see announcements later this fall which extend the rollout: a single I/O subsystem will support [Computer Interconnect, Digital Storage Systems Interconnect] and SCSI and eventually FDDI," she added.

Dubbed the HSC65 and HSC95, the new controllers will support up to three and four channel cards, respectively. These new channel cards and SCSI-2 ready upgrade kits for the HSC40, 60, 70 and 90 controllers are expected to ship in first quarter 1993.

The HSC65 and HSC95 servers feature an improved performance of 1,800 I/O re-

quests per second and an embedded 64M-byte cache for a transfer rate of 4.2M byte/sec., DEC officials said. The HSC65 offers support for 20 devices, and the HSC95 offers connections for 48.

"For existing DEC customers, this is good news — they'll be able to mix and match CI and SCSI drives, and they can get higher performance HSCs at a lower price. And there are promises that the DSSI drives will be incorporated in the future," said Chris Christiansen, an analyst at International Data Corp. in Framingham, Mass. "But it remains to be seen whether users can go out and buy third-party SCSI

drives and implement them legally inside of the VAXcluster technology."

While DEC is not scheduled to ship SCSI-2 support until January, MicroTechnology, Inc. in Anaheim, Calif., began shipping its Stingray C1-attached server earlier this year, which allows current DEC customers to plug SCSI-2 peripherals into their Computer Interconnect VAXclusters, according to Tom Raimondi, vice president of product marketing at the firm.

"DEC's announcement of HSC65 and 95 is in line with where the industry is going: the fact that in the future they'll be able to support SCSI is what the customer is asking for," he said.

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MasPar revs up speed with MP-2 platform

BY ELIS BOOKER
CW 12487

SUNNYVALE, Calif. — MasPar Computer Corp. recently introduced its second-generation massively parallel supercomputer, offering a system with five times the performance of its initial system, the MP-1.

Analysts said the power increase in the just announced MP-2 was to be expected in an industry where significantly more powerful systems debut every 18 months.

The more notable news, they said, was the new pricing on MasPar's MP-1 platform, which was reduced to \$75,000 for an entry-level configuration.

A massively parallel processor (MPP) system costing about the same as a high-end workstation "should open some interesting market possibilities," said Gary Smaby, president of Smaby Group, Inc., a high-performance computing consultancy in Minneapolis.

"A local-area network can now have a \$75,000, 1,000-processor MPP as a server with 1,600 MIPS of compute power," said MasPar President and Chief Executive Officer Jeff Kalb. "This [pricing] allows people to bring this kind of technology into the workgroup," he said.

Greater accessibility


Charles Casale, chairman of the Aberdeen Group, a Boston-based consulting firm, agreed that the pricing was significant. "People who have Cray Research, Inc. supercomputers that are fully loaded can now get a MasPar," he said, adding, "It's a cheap, incremental way to try MPP."

But Casale said Aberdeen has been cautious about the widespread applicability of MPP, noting the thinness of application software for this kind of machine.

The MP-2, with configurations of 1,024 to 16,384 processors, ranges in price from \$260,000 to \$1.6 million.

The MP-2 uses new, customized reduced instruction set computing chips, each offering 12.3 million floating-point operations per second. The MP-2 is also binary-compatible with the more than 130 MasPar MP-1s that have shipped so far.

Digital Equipment Corp., which has been selling the MP-1, extended its OEM agreement to cover the MP-2 family as well.



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Encore unveils Unix-based mainframe

BY MARYFRAN JOHNSON
CWS/CLAF

FORT LAUDERDALE, Fla. — From its small but significant niche in the technical arena of real-time computing and parallel processing, Encore Computer Corp. recently launched a Unix-based mainframe targeted at data centers.

Whether this shift in company strategy is brilliant or boneheaded is a question Encore will answer during the next year, as its Infinity 90 series runs into well-trenched competition from NCR Corp., Hewlett-Packard Co. and Digital Equip-

ment Corp. Also racing toward what analysts call the "alternative mainframe" market are Pyramid Technology Corp. and Sequent Computer Systems, Inc., both with upcoming introductions of mainframe-class systems.

"The alternative mainframe is low-cost, scalable and probably 18 months to two years ahead of traditional mainframes in terms of openness," said Jim Cassell, an analyst at Gartner Group, Inc. in Stamford, Conn.

Users attracted to these boxes are currently stymied in their migration to distributed client/server environments by a lack

of sophisticated system- and network-management software, Cassell noted. Until such products are available, the task of managing a distributed environment is best handled centrally, in a centralized fashion, he added. Alternative mainframes offer "a way to start doing that," Cassell said.

Impressive speed

Available now at an average price of \$1.3 million, Encore's Infinity 90 is a highly scalable, symmetric multiprocessor that runs a standard Unix operating system and is based on Motorola, Inc.'s 88000 re-

duced instruction set computing processors.

The Infinity 90's claim to fame is roaring I/O capacity and throughput performance. It can reportedly transfer data at 53M byte/sec., compared with the 4.5M-byte/sec. rate of many mainframes.

Though impressed with the technical punch of Encore's mainframe, analysts pointed out several challenges this \$225 million company faces in getting a mainframe business off the ground. Encore is virtually unknown outside technical sales channels and has no built-in sales channel for mainframe-class systems.

Bringing the Infinity systems to market quickly and "generating immediate sales" is the real challenge Encore faces, said Larry Tanning, vice president of SuperSolutions Corp., a Minneapolis-based systems integrator now testing an Infinity 90 as a potential platform for large applications in health care and finance.

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Off-the-shelf Unix gains Integrity

BY JEAN S. BOZMAN
CWS/STFF

CUPERTINO, Calif. — Tandem Computers, Inc.'s enhanced Integrity system, announced last month, will allow users of the fault-tolerant Unix machine to buy off-the-shelf applications based on AT&T Unix System V, Release 4. Tandem dressed up the 2-year-old Integrity with a new fault-tolerant version of Unix System V, Release 4 and a user-friendly code.

The enhancements target small information systems shops and were designed to increase Tandem's share of the fault-tolerant Unix market, analysts said.

However, a lack of connectivity between Tandem's traditional Guardian fault-tolerant systems and the Integrity machines has prevented Tandem from building its Unix business faster, analysts said (CW, March 30). "Tandem is putting a lot of effort into looking for new customers, but they are not able to capitalize on their installed base," said Ricki Kirmer, a principal analyst at Dataquest, Inc. in San Jose, Calif. NCR Corp. is reselling the Integrity machines as its StarServer FT network systems, she added.

Third-party options

Users of Tandem's Integrity system, who tend to be in the communications, banking and transportation sectors, have already turned to third-party vendors for Unix packages.

One benefit to Unix is that it is easier to find people to program custom Unix applications than Guardian software, said Bill Godwin, a manager at Infonet Services Corp. in El Segundo, Calif., which provides electronic-mail services to 7,000 sites worldwide.

The new NonStop-UX Release 2.0 was designed to further reduce the number of Unix system "panics" that can crash a system and to speed recovery from a crash.

The enhanced NonStop-UX 2.0 software is priced at \$22,000. Tandem's icon-based Integrity console software for simplified system management costs \$5,000.

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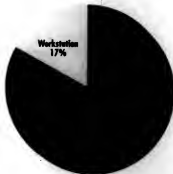
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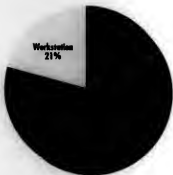
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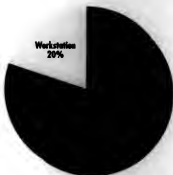
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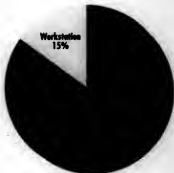
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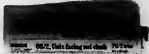
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The Newspaper of IS

LARGE SYSTEMS

Amdahl 5995M: More muscle, less cost

Evaluators say Amdahl's 4550 mainframe has some advantages over IBM machines, but they also experienced reliability problems in the first few months using the system



Computerworld's New Product In-Site is an evaluation based on interviews with major users of corporate and educational installations. The product under evaluation is being used in live application environments.

AMDAHL CORP.'S 5995M MODEL 4550

- Despite early product glitches, Amdahl's 5995M series mainframe wins bids against IBM in these large shops based on price, service and capacity. Discounts have been as deep as 60% off the list price of \$17.5 million for the Model 4550 four-way processor.
- The 4550 is an interim upgrade for these corporate sites, which are considering Amdahl's top-of-the-line six-way and eight-way processors when they become available.
- Series 5995M's new features, such as Enhanced Performance Facility, Concurrent Maintenance and Escon compatibility, are not fully in place at these sites because of staged delivery schedules and user caution about their implementation.

Amdahl Corp. is not pulling any punches in its mainframe market share battle with IBM and Hitachi Data Systems Corp. (HDS). The company is offering the biggest, meanest mainframes on the market at some of the best prices users have seen in years.

"In terms of discounting, Amdahl

has been unbelievably aggressive," said Susan Gannon, a senior analyst at Technology Investment Strategies Corp. (TISC), a research firm in Framingham, Mass. "1992 has been a tough year for them. They anticipated getting a lot more machines out. They are giving away what they can to make the customer base happy."

Installation descriptions for companies that evaluated the Amdahl 5995M Model 4550

	Refuel	Utility 1	Utility 2	Education
Number of Model 4550s	1	1	Multiple	1
Time installed	3 months	3 months	6 months	3 months
Other mainframes	3 Amdahl	3 IBM, 1 Amdahl	Multiple IBM	None
Operating system	MVS/ESA	MVS	MVS/UTS	MVS/ESA
Number of staff members	240	100	Varies with site	17
Main memory	512M bytes	512M bytes	768M bytes average	1G byte
Expanded storage	312M bytes	512M bytes	1,024M bytes	2G bytes
Number of channels	96	128	192	128
Application types	TSO/IMS/CICS and batch	Batch/on-line	IMS/DB2/CICS/TSO and batch	Batch/on-line

NOTE: REFUEL: Product ratings are based on evaluations from four user sites (bracketed above). These are production users of Amdahl 5995M Model 4550. The users are members of Computerworld's Product Evaluation Council.

The best evidence of this is discounts of up to 60% on Amdahl's 5995M series. Four users of the four-way processor Model 4550, the largest capacity machine currently installed, reported receiving good discounts and solid performance in their evaluations of the system, which is rated at 183 million instructions per second (MIPS). The largest model in the line, the 9650 eight-way processor — rated at 311 MIPS, more than any other machine available — is just being delivered to sites this month after a 90-day delay.

The evaluators were selected from more than 30 members of the Computerworld Product Evaluation Council, a group of information systems organizations that regularly evaluates and operates new products in production environments. Consultants from TISC and Howard Rubin Associates developed the questionnaire and rating system used to evaluate the product.

AMDAHL VS. IBM

The same method was used with a different group of evaluators to assess IBM's Enterprise System/9000 Model 900, rated at 240 MIPS, for a previous New Product In-Site (CW, May 11). As can be seen by the ratings summary, the two products received a very close overall rating. However, IBM's model received the highest rating for reliability, while Amdahl's 4550 was only slightly better than average. IBM also edged its competitor in performance, ease of installation and operation — even though ES/9000 users were struggling with the challenges of installing fiber-optic Escon channels.

The 4550 surpassed the 900 in floor space size and utility use because it allows more flexible power options and provides opportunities for consolidation and upgradability to the six- and eight-way models, while IBM has yet to announce when its eight-way product will be ready. Both products received above-average ratings on price, based on heavy discounting by the vendors.

RELIABILITY

Unlike the IBM evaluators, who reported near-perfect operations, two of the four Amdahl evaluators experienced outages that shut their mainframes down unexpectedly.

Retail evaluator: "Both outages were extremely short. We took a channel hit, they diagnosed something and brought it back up. Within the next day or so we scheduled an outage and replaced a part."

In one case the problem was an environmental sensor card that falsely signaled a problem with power. The retail

	MIPS
Amdahl's 5995M Model 4550 (Four-way processor)	183
Amdahl's 5995M Model 9650 (Eight-way processor)	311
IBM ES/9000 Model 900	240
IBM 3090 Model 600J	119

site has one 4550 and three other Amdahl mainframes.

Utility 2 evaluator: "We've had two major outages. One was pretty extensive — about six hours in duration. We have been experiencing problems. Amdahl has been working hard on resolving these problems."

The 4550's Dual Logging Entry card failed in one case, and the microcode was not at the proper level to determine the problem. Teradata Corp. devices and front-end processor failures also occurred related to the connection with the Amdahl processors. Utility 2 has multiple 4550s installed and has been using them for about eight months. The company also uses multiple ES/9000 Model 900s.

PERFORMANCE

Based on a combination of database transaction and production applications, the evaluators found the 4550 met their performance expectations. They were comparing the systems with reported performance numbers from Amdahl and with how well the systems ran on previous smaller capacity processors.

Education evaluator: "Prior to this, we had an IBM 9021 Model 720 in a 117 MIPS machine, six-way processor. We weren't sure what to expect going from a relatively slow six processors to a relatively faster four processors rated at 183 MIPS. Our database and on-line transaction times really improved significantly. The individual speed of the processors seemed to matter more in our environment than the number of processors."

Utility 1 evaluator: "It met expectations based on an application which ran on an IBM 3090 600. It ran faster because it's a bigger machine."

Retail evaluator: "We upgraded and moved work load around so it wasn't all that quantifiable. The feeling was that it was performing as expected based on the level of an installed 100 MIPS into the shop."

Utility 2 evaluator: "Some of our analysis looked at performance of an

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CASE firms play musical chairs

BY KIM S. NASH
CW STAFF

Elbow room in the computer-aided software engineering (CASE) market is dwindling as more vendors crowd the arena at every hardware level. That means your application development dollar is hot property now more than ever.

The major vendors are vying to pry that money from information systems pockets in different ways, such as by adding consulting services, beefing up user training programs and making tool sets more modular.

A round of musical chairs among product strategy settlers at three major CASE companies means that users should brace themselves for modified product directions during the next 12 months. Here is the rundown:

■ **KnowledgeWare**, Inc. Paul Hessinger, former chief technology officer at Germany's Softlab, Inc., is now responsible for business strategy and technical research at KnowledgeWare.

Hessinger plans to put his consulting experience — courtesy of 17 years at Computer Task Group, Inc. — to work at his new home, substantially boosting KnowledgeWare's service offerings.

KnowledgeWare plans to focus on band-aiding in two areas, Hessinger said. One is tool instruction; the other is making "customers cost-effective with the technology," he explained. To see hard, bottom-line results from complex application development methods, users have to

think beyond CASE as a tool and see it as an aid to reforming business tasks, according to Bernie Stephan, director of special technical services at Computer Power Group's San Francisco office.

That is precisely KnowledgeWare's new emphasis, Hessinger said, adding that the company has stepped up the hiring of instructors and consultants. Expect more vertical market offerings in the future as well, such as templates for applications oriented toward specific industries.

■ **Intervio**, Inc. The Rockville, Md. company created a new position in North American marketing to

accommodate Peter Privater, who left his post as staff vice president of strategic product planning at KnowledgeWare in Atlanta two months ago.

Industry observers said Privater had lost faith in KnowledgeWare products and had been looking to leave; both Privater and his alma mater declined comment on the reasons behind his departure.

Intervio, meanwhile, is on the rise, analysts said. Now that it has dropped out of IBM's AD/Cycle alliance, the company is aggressively pursuing the client/server application development tools market. Intervio is ahead of most other CASE vendors in building applications to run in cli-

ent/server mode, according to Paul Bloom, an analyst at Volpe, Welby & Co. in San Francisco.

APS 2.2, a code generator, is key to this push, as is the company's local-area network-based repository. "Interachy

is on the ascendancy," Bloom said.

■ **Softlab**, Inc. New chief technology officer Robert Rockwell is bringing open systems development ideas to

Softlab's table. Rockwell just ended a year's stint as technology director at Eureka Software Laboratory, a European CASE project

to set standards for Unix application development.

That is an arena Softlab intends to pursue as part of an all-out push to cull U.S. business. The company is strengthening its San Francisco beachhead by hiring several consultants. Softlab recently introduced two tools here: Systems Maintenance Toolkit, a back-end CASE suite, and Maestro II Release 2.1, an OS/2 version of a full life-cycle workbook.

Parent company BMW is not averse to flipping deep to help the cause. "We want to accelerate U.S. growth via acquisition," stated Michael Metcalf, U.S. marketing manager.

Early last year, Softlab and KnowledgeWare talked merger, but the deal fell flat when KnowledgeWare rejected Softlab's bid of an estimated \$350 million, according to a source close to the firms (CW, April 6). Softlab would not specify current acquisition targets.



Softlab's Rockwell bringing open systems development ideas



KnowledgeWare's Hessinger wants to boost service

Martin, Intellicorp test workbench

BY GARRY RAY
CW STAFF

Information engineering, the brainchild of systems guru James Martin, will be married to object-oriented techniques in a new development workbench being tested by James Martin & Co. in Reston, Va., and Intellicorp, Inc. in Mountain View, Calif.

Object Management Workbench (OMW), first announced by the companies earlier this year, will undergo field testing immediately, the two companies announced recently.

According to officials at both firms, OMW extends the information engineering (IE) methodologies that Martin and others have proposed since the early 1980s. Like conventional IE, it allows executives and information systems professionals to embody business models in software. Those models include business rules and business data structures, which are then implemented in specific software systems.

The marriage with object-oriented techniques is a modification of the original IE model. Based on the notion that object-

oriented approaches are more flexible and adaptable than the structured techniques of traditional IE, this updated thinking is espoused in Martin's latest book, "Object-Oriented Analysis and Design," which he co-authored with James Odell. According to one James Martin & Co. official, that new methodology "has driven the diagramming standards and functionality of OMW."

Tool trio

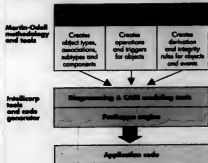
OMW, the official said, includes three major components: an object diagrammer, an event diagrammer and a business rule editor. The tools are currently implemented within Intellicorp's Pro-Kaps development environment, which runs on the Open Software Foundation's Motif user interface.

The object diagrammer allows users to develop classes of objects and supports subtyping and components. In addition, users can attach attributes as well as value types to objects and encapsulate one object within another.

The OMW event diagrammer implements event modeling.

Continued on page 57

OBJECT MANAGEMENT WORKBENCH



CW Chart: Stephan-Pearson

NCR offers NICE app development tool

BY MICHAEL FITZGERALD
CW STAFF

ATLANTA — They say you should take things nice and easy. NCR Corp. hopes its first foray into the personal computer software market, an application development tool called NICE, will make application developers' lives easier.

NICE, which stands for Natural Interface for Computing Environments, is a software development kit designed to work with Microsoft Corp.'s Visual Basic product and Microsoft or Borland International, Inc.'s C++ languages. It runs under Windows 3.1.

"We built it to... create a better user interface," said Steve Banfield, project leader for NICE. Banfield pointed to some 20 built-in custom controls, such as a dynamic keypad layout, multiline buttons, graphic buttons and an editor.

"The No. 1 thing we offer is the human interface design guide," Banfield said. NCR hired many scientists to create a tool that walks a developer through steps to devise an optimal interface for the way people interact with a computer. NCR claimed that developing prototypes is up to 60% faster when NICE is used.

It also claimed that in a text novice computer users needed

only 20 minutes of training to become proficient in a system, and were 66% less likely to need help after training. The retailer that conducted the test saved 86% of its training costs.

At first glance, one user who saw NICE demonstrated said it looked interesting.

"We'd want to know about this product; otherwise, we'd have to go through trial and error to build applications and have the users change things to their liking," said Joe Barrett, lead technical analyst for architecture and applied research at Wharpoon Corp. Barrett said NCR's emphasis on creating a tool that was oriented to the way humans work could

be a plus.

Gregory J. Buzek, NICE product manager, said NCR originally developed NICE for one of its retail customers.

"Retailers see in some cases 300% to 400% turnover in cashiers, and training costs are a big thing for them. We needed an interface that would make this easier to learn," Buzek said. He noted that NCR was able to reduce

the average training time for a point-of-sale system from two hours to 20 minutes and said he thought the product might sell in the shrink-wrapped market.

NICE will go on sale next month for \$295. NCR will market it through The Connection, a catalog, and through its direct sales force. In January, NCR plans to introduce a version of NICE with pen extensions.

SOME COMPANIES WILLING TO PAY FOR A IT'S THE ONLY

Design. Engineering. Testing. Service. Support. When you think about it, these are what make one computer better than the next. Which makes it all the more surprising that companies are cutting back in these areas. And, amazingly, some do little but stick their name on at the end of somebody else's assembly line.

It would be like buying a car, looking under the hood, and discovering that it was built by a company you'd never heard of from a place you'd have trouble finding on the map.

It makes you wonder about the kind of company that would do it. Why they would make the decision to put their name on a product over which they maintain little control. And why they would then sell it to

their customers.

Obviously, at some point during some meeting in some boardroom, the mandate came down:

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Other PC companies do things differently, like offering substantially limited service and support for products they apparently have less confidence in. Dell has even gone so far as to withdraw their

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COMMENTARY

Jim Paul

Still room for heroes



For the first time since the event's inception in 1987, the Software Engineering Institute (SEI) opened its annual symposium to companies that are not producing software for the Department of Defense. Twelve hundred people attended last month—nearly double the previous year. It was a likely place to get a handle on the state of software engineering.

Understanding the process of producing software has become a priority in organizations such as the military and its contractors. Both rely heavily on large amounts of software to run communications, command and control and weapons systems such as the F15 fighter and Patriot missile.

Yet most private-sector companies are beginning to realize how dependent they are on software and how expensive software can be. Few understand how to manage that component.

So the question is, "How do we manage the process so that software projects come in on time, on budget and with few bugs? How do we minimize the risk?"

The SEI is searching for those answers. Run primarily by Carnegie Mellon University in Pittsburgh, it has its own full-time staff as well as "affiliates" from industry and the military. Collaboration among government, business and academia in software engineering is not unusual. Many countries in Europe also have ongoing projects, but few have yet produced any significant results.

Although the SEI does do some work specific to the kind of real-time programs that are embedded in weapons, most of the work presented at the symposium focused on the Capability Maturity Model. It is for this model that the SEI is best known.

Measuring maturity

The Capability Maturity Model is a yardstick to assess the capability of an organization to produce quality software. The model stems from the need of the military to assess the qualifications of bidders to deliver software. For example, the SEI or a consultant (some are licensed by the SEI) can, through the use of a survey, interviews and observations, rank a company as to its "process maturity," and thus the likelihood that it can deliver complex software.

There are five levels of maturity in the Capability Maturity Model. The first is the organization that relies on hot guns to produce its software, with no internal controls or measurements. At the opposite end, Level 5, is the organization that continuously tracks projects and measures results. These results are used to further refine the software production process.

Of 15 companies evaluated by the SEI, virtually none has rated more than Level 2. Some what of a relief is the fact that Capability Maturity Model evaluation results have not yet weighed heavily in contract decisions.

SEI staff members stress that the mod-

el should be used for more than just evaluation. It should be the starting point of a cycle to refine a company's software capabilities.

How does an organization improve its development processes? By measuring the results and making refinements. The steps in process refinement are nearly identical to the problem-solving steps used in most Total Quality Management (TQM) programs. Team-building is an important component of both.

Most, if not all, of the people making presentations for organizations involved with the SEI were also conducting TQM programs. Bill Craig, presenting for Microm, said, "We view the CMM as a subset or special topic under our TQM program."

Neither TQM nor the Capability Matu-

riety Model offer specific guidance about programming languages, programming methods such as object-oriented programming or specific vendors' computer-aided software engineering tools. Both are vendor-neutral. What they provide is management structure and reality checking. They help assure that whatever software engineering decisions you do make are motivated by the right factors and that the results can be evaluated in the objective light of the Capability Maturity Model.

Programmer value

As the process of software development comes more under control, will there be room for the superstars of programming? Will a desire to be precise eliminate innovation? "I tell my people not to focus on the

numbers. They are tools, and the goal is the process," one panelist said of his experience using the Capability Maturity Model.

Companies using the Capability Maturity Model are not losing sight of the fact that smart, motivated people write good software. No one wants to kill the golden geese.

Hughes Aircraft's John Weaver, one of the keynote speakers, said, "There is no substitute for good people. The goal of these changes is to leverage the skill of our people."

Even with the Capability Maturity Model, there will always be room for heroes.

Paul is a consultant and principal at Northeast Consulting Group in Pittsburgh.

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IN BRIEF

Synon selling planning tool for AS/400 users

■ Synon Corp., an IBM Application System/400 application development vendor in Larkspur, Calif., began selling Silver-run, a planning and analysis tool from Computer Systems Advisors, Inc. in Woodcliff Lake, N.J. The companies plan to build a bridge between their respective tools by mid-1993. Silver-run, which runs under OS/2 and Microsoft Corp.'s Windows, is available in English and French versions, with a Japanese version due out early next year.

■ Measuring the size and productivity of existing and under-construction applications is the subject of upcoming workshops by Productivity Management Group, Inc. in East Amherst, N.Y. The \$425, one-day sessions will focus on using

function-point analysis to track software development activity.

■ Cortex Corp. in Waltham, Mass., has begun shipping Cor-Vision 5.0, an application generator for building Unix programs. The product, priced at \$35,000 for the first seat, can produce programs for Ultrix from Digital Equipment Corp., HP/UX from Hewlett-Packard Co. and SCO Unix from The Santa Cruz Operation.

■ Seer Technologies, Inc., a Cary, N.C.-based firm co-founded by IBM and First Boston Corp., enhanced its High Productivity Systems tool set to help distribute host-based applications to IBM AS/400, OS/2 and DOS clients.

Firms test workbench

CONTINUED FROM PAGE 93

which allows users to establish the types of operations, events and processes that might occur within the business.

For example, the event diagram could be used to model "temporal events" such as stock market activity or "state events" such as converting an airline ticket to a fulfilled state when a passenger gets on an airplane. The tools also support triggers, which are information flows that activate other operations.

Finally, the business rule editor can be used to capture business policies and rules and then attach these to specific objects and events. For example, a rule indicating that an airline flight is overbooked could be attached to an airplane object.

But some observers are leery of the Martin and Odell methodology and its planned implementation in OMW.

"I'm confused about how they portray object interaction," said Ron Schultz, a senior software engineer at Berard Software Engineering, Inc., a consultancy in Gaithersburg, Md. Schultz has recently completed a comparative analysis of object-oriented methodologies for Berard.

Concerning the Martin and Odell approach, he said, "There are no object and class specifications. I don't see how it provides for reuse. The modeling process is not well-defined." However, Schultz added, "It lends credibility to have Martin bestow his name upon object orientation."

Aside from the methodology, "The objective was to create a modeling process that was more intuitive for [the IT department] and business users," said James Wyatt, president of James Martin & Co.

According to Wyatt, tools such as OMW make it possible for users to create models of a business using IE and object-oriented processes and then execute the model immediately. That provides an interactive environment for business and systems modeling that is difficult to obtain using existing modeling methods, including traditional systems analysis.

"The problem now is the quality of the systems analysts. We want to decrease the role of the analyst in the critical path and allow business users to directly interact with the computer," Wyatt noted.

That direct interaction with modeling tools is the first step in a technique that James Martin & Co. is calling "enterprise visioning." Broadly speaking, its intent is to allow executives to "vision" and test alternate business models.

Wyatt said it is a natural evolution of IE, rather than a switch to yet another messy modeling technique. "We wouldn't call IE a dead end. We're trying to go a step further," he said.

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NEW PRODUCTS

Application development tools

CaseWorks, Inc. has announced CASE-W Visual Integration Platform (VIP).

According to the company, the product is the first Microsoft Corp. Windows-based client/server development tool designed for use with C, ObjectWindows and Microsoft Foundation Classes platforms. Standard languages are used when developing applications, and the product provides high-level graphical designers that generate various components on the interface, including menus, panels and win-

dows. The output from the graphical designers is assembled by source code designers that also define how they are to be generated into the source code.

CASE-W VIP costs \$2,995.

CaseWorks Suite 130
1 Dunwoody Park
Atlanta, Ga. 30338
(404) 399-6236

TeleSoft has announced Version 2.1 of TeleUse, a user interface management system.

According to the company, the product was designed for the interactive development of graphical user interfaces based on

the Open Software Foundation's Motif. Ease of use enhancements are offered in this version, including an improved user interface, a more powerful Dialog Manager with expanded C++ integration and support and third-party tool integration. An assessment manager provides direct access to all of the company's facilities and third-party development tools. Enhanced C++ support and a C++ example are provided.

TeleUse 2.1 costs \$7,500.
TeleSoft
5959 Cornerstone Court
West
San Diego, Calif. 92121
(619) 457-2700

Emulex Corp. has announced the Emulex Communications Executive, an applica-

tion development tool kit.

According to the company, the tool kit was designed to enable users to write custom communications applications by using Emulex's DCP-286 line of personal computer-compatible communications coprocessors.

The product runs under DOS and Unix operating systems and supports communications protocols including Synchronous Data Link Control, X.25 and High-Level Data Link Control. Features include the ability to allow development with the standard Microsoft Corp. C compiler under DOS and the ability to create runtime modules for DOS and Unix. An on-board kernel supports real-time, preemptive multitasking operations.

The tool kit costs \$2,000.

Emulex
3545 Harbor Blvd.
Costa Mesa, Calif. 92626
(714) 662-5600

Languages

Software AG of North America, Inc. has announced Natural for DB2 2.2.

The product is a new version of Software AG's application development environment, which allows DB2 users to develop fourth-generation, product quality applications for IMS/DC, CICS and batch. Full SQL DML support is provided for DB2 application development.

Natural for DB2 2.2 offers a new DB2 Tools facility that has interactive support for a variety of database administration functions related to DB2. These functions include data definition language and data control language support as well as application plan maintenance. An interactive SQL feature provides immediate generation of SQL statements.

The cost of Natural for DB2 ranges between \$72,000 and \$171,400.
Software AG of North America
11190 Sunrise Valley Drive
Blessen, Va. 22091
(703) 860-5050

Code libraries

Liant Software Corp. has introduced Figaro 3.0 C, a Pthgs-based programming library.

Figaro 3.0 C was designed to allow users to develop graphics applications in the object-oriented environment of C++. Fully callable from C++, the product enables users to develop applications by accessing Figaro 3.0 graphics routines and libraries from C++ and from object-oriented programming languages.

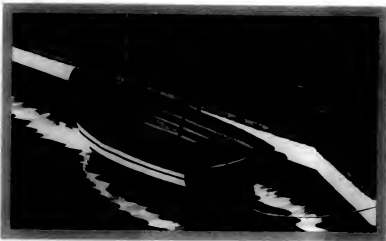
Figaro 3.0 C costs \$2,800.
Liant Software
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Framingham, Mass. 01701
(508) 872-8700

BMSL, Inc. has released the C/Math/Library for Silicon Graphics, Inc.

According to the company, the product is a library of C functions for solving mathematical problems such as interpolation and approximation, differential equations, transforms, optimization and linear systems. On-line documentation is included. The C/Math/Library is available with both node-locked and floating licenses. Prices start at \$3,000.

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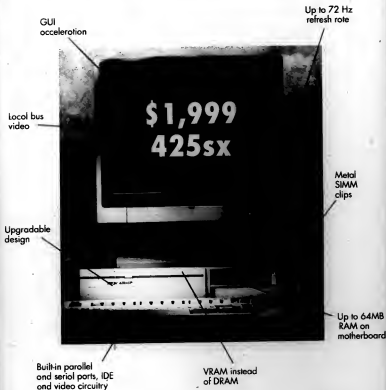
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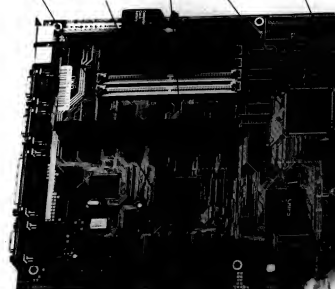
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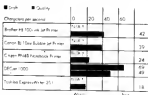
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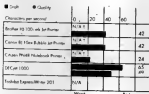


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INTEGRATION STRATEGIES

APPLICATION DEVELOPMENT

Distributed systems: Tough to take root

BY JULIA KING
SPECIAL TO CW

Thinking about transplanting software development pilots into larger corporate settings? Then be prepared to act less like Johnny Appleseed and more like Indiana Jones. Information systems managers and consultants experienced in building cross-platform, client/server-based enterprise systems say there are many pitfalls.

"Basically, what we have right now is very much a seat-of-the-pants technology," says Aaron Zornes, vice president and director of applications development strategies at Meta Group, Inc., a consulting firm in Westport, Conn.

"It is really more art than science at this point because many people don't even understand all of the requirements," Zornes adds.

Challenges with networks, choosing suitable software tools and user interfaces and reconciling incompatible databases further complicates matters, according to experienced hands.

Unlike traditional mainframe applications, consultants and IS managers say developing enterprise systems to operate in today's distributed environments actually involves architecting two or more programs to run on dif-

ferent competing platforms.

Programs must be optimized not only to run on various machines but also to perform efficiently over the network, an area in which many developers have little expertise.

One result, notes Tom Love, president of OrgWare, a Roxbury, Conn., consulting firm, is that developers are moving from a pure applications environment to a systems environment, which can present problems. "Developers now have to deal with communications," Love notes, "and... in real time, which is much more complex."

Little wonder that in many companies the work of developing enterprise applications is still in the very early stages.

Yet some IS managers have taken steps to successfully meet these chal-

Continued on page 102



Barthory Gully

No easy answers from commercial integrators

Many firms are hungrily eyeing this \$5 billion market. Here's help weeding out the worthy from the wannabees.

BY MARK MEHLER
SPECIAL TO CW

Information systems shops forced to turn to commercial integrators to help migrate existing applications off the mainframe, or develop client/server applications from scratch, will find a bevy of questions and a shortage of yes or no answers.

Among these conundrums: How much attention should be focused on a vendor's proprietary methodology? How does one define a truly "open" methodology? Should you contract a single integrator for both business and systems re-engineering? Do the traditional management consultancies have an edge by virtue of their experience in re-engineering business processes?

"Users have no mechanism to distinguish among the technological capabilities of the integrators in this market," says Oliver Pflug, an analyst at G2 Research, Inc.

Others suggest that users inundated with competing integrator claims strip the decision down to basics.

"Everybody is a client/server specialist, everybody claims to do enter-

prise-wide strategic [consulting], everybody has the best methodology," notes Ira Sager, a principal at Bellevue, Wash.-based consultancy Para-Technology, Inc.

"These terms have become almost meaningless. What a user needs to look at are the people.

Are they programmers who've been working in Cobol for six years who started working in C++ six months ago?" Sager says.

It's not hard to see why commercial systems integrators are falling all over themselves chasing enterprise applications development business.

There's a big money to be had.

According to G2 Research, IS organizations will spend nearly \$5 billion this year on services related to designing and creating software code (see chart).

Moreover, G2 Research says demand for such services is growing at roughly 21% a year—about 10% more than the overall commercial integr-

tion market. Annual growth in computer-aided software engineering (CASE) services tops 28%.

Observers cite several driving factors. Chief among them: a lack of IS experience with personal computer local-area networks and client/server

see relationships with integrators as critical to penetration of Fortune 1,000 companies.

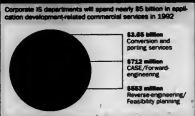
Know the players

Consultants say it's important for IS to know the major players in application development—their approaches and their strengths.

Big integrators can be divided into two camps: firms with large investments in their own methodologies and tools, which are licensed or sold as stand-alone products or as part of integration engagements; and those that rely on commercially available products to develop custom systems.

Andersen Consulting, Ernst & Young, Electronic Data Systems Corp. and Digital Equipment Corp. in varying degrees, fall into the former category. SHL Systemhouse, Inc., Computer Task Group and Technology Solutions Co. are among the latter.

Continued on page 106



Source: G2 Research, Inc.

CW Chart: Synthesized Factor

environments. And no vendor of development tools can yet offer a complete solution, opening up a huge opportunity for service providers experienced in meshing multiple hardware and software platforms.

Product vendors, too, increasingly

Distributed systems: Tough to take root

CONTINUED FROM PAGE 101

lenges. Following are accounts of the problems they have encountered and their solutions.

DSC Communications Corp.

Eighteen months ago, DSC Communications Corp. in Plano, Texas, created software in much the same way as many other companies: in the glasshouse.

First, users got their names on a list. Then they waited in line. Then, IS would write up requirements and maybe even specifications. Finally, after several months or more, "maybe something might come out the back door of the IS department," says Jim Myckleby, vice president of IS at the \$500 million digital switch manufacturer.

But all too often, he acknowledges, what came out was not asked for or, worse, completely useless. User needs had often changed while IS was developing and implementing the application.

Today, by contrast, there is almost no waiting for new or revised business applications, according to Myckleby. The reason? Programs are now written by users employing Oracle Corp.'s SQL-forms development tool. End users own build their own client/server applications, guided by a 128-page manual of in-house development rules, guidelines and conventions furnished by the same IS department that once kept users on what seemed like eternal hold.

Myckleby is the first to acknowledge that setting up users as programmers might be a bit crazy, as some colleagues keep telling him.

"But it's also a question of survival," he says. "I couldn't hire enough people to satisfy users' appetite for new applications. It was too expensive and meant too many programmers. It was time for IS to recognize that we're not the only ones who are computer-literate."

Myckleby's first step was to swap out an IBM mainframe for a lower cost AMDahl Corp. 5985/1100 system running both Unix and MVS. Next, IS addressed the issue of incompatible operating environments by standardizing on a single database engine and set of development tools, both from Oracle.

Today, the Oracle relational database is housed on the AMDahl system. On the client side are the computer-aided software engineering (CASE)-based tools,

which reside on some 2,000 IBM and compatible personal computers and another 500 or so workstations from Sun Microsystems, Inc. and Hewlett-Packard Co.

"This is a different tack from traditional client/server in that the AMDahl is our big server in the sky. But our strategy was to make sure we had a hardware platform that was extremely reliable and one where we could manage and secure data," Myckleby explains.

As for training, DSC employees attend either in-house classes taught by IS staffers or formal training sessions sponsored by Oracle. IS professionals also work one on one with users still learning Oracle, a process that usually lasts about a month, according to Myckleby. Other support is provided by an IS contact assigned to each department.

In the year and a half that DSC's "Open Shop" applications development strategy has been under way, users have created both departmental and enterprise applications, Myckleby says.

Among the latter are quality reporting applications now used by all seven of DSC's divisions and a manufacturing program for tracking component sub-assemblies and shop-floor processes.

Both applications have now been turned over to IS, which Myckleby says can easily maintain them "because they were built by users just as IS would have built them."

During the same period, the role of DSC's applications development staff — now 30% leaner than in January 1991 — has also changed substantially.

"We've gone from processors of information to data architects, data engineers and systems integrators," Myckleby says. Empowering users with needed data and tools, he adds, has effectively created a new matrixed development organiza-



DSC's Myckleby: We've gone from processors of information to data architects.

tion under IS.

Overall, Myckleby concludes, the "entire organization has become more key to the business process and less focused on being the technology center. We're here to solve business problems, and technology is second."

Aluminum Company of America

A few weeks from now, developers at Pittsburgh-based Aluminum Company of America (Alcoa) will roll out a prototype client/server-based purchasing application that, if early interest means anything, users seem eager to buy into.

"The idea is to enable users to make their own purchases so that the purchasing department can focus more on big-ticket items," explains Travis Morse, who manages client/server systems support. "Some users have already had a peek at it, and they have loved it."

Built using PowerSoft Corp.'s PowerBuilder, an object-

oriented development tool, the application splits the purchasing function into two distinct parts.

On the server side, an on-line catalog of commonly purchased items resides in a Sybase, Inc. relational database on a Digital Equipment Corp. VAX. On the client side, users of PCs and Macintoshes can browse through the catalog and initiate an electronic data interchange-based purchase order from a DB2 database on the corporate mainframe for items priced under \$5,000.

But before the purchasing program or any other client/server-based prototype can make the transition to enterprise application, Alcoa must finish building a wide-area network that will link 10,000 of its users at more than 100 sites worldwide when it is completed next year.

During the last three years, Alcoa has spent \$8 million on the network, which now links 50 company sites; another \$9 million is earmarked for completion. The network will eventually route a limited number of standardized communications protocols, still to be determined by the company's IS department.

Meanwhile, Morse says one-fifth of the company's 200 applications developers have been evaluating hundreds of CASE-based and fourth-generation language tools in hopes of standardizing on development software by mid-October. The company has established standards for network clients (Intel Corp. 80386 or 486-based, Microsoft Corp. Windows-capable desktop systems).

Continued on page 104

DSC COMMUNICATIONS CORP.
Plano, Texas

GOAL: To eliminate slow, "glasshouse"-based application development.

STRATEGY: Switched from IBM to AMDahl Corp. 5985/1100 system running Unix and MVS. Standardized on single Oracle Corp. database engine. Users write own client/server applications using Oracle SQL-forms development tool running on 2,000 PCs and 500 Sun Microsystems, Inc. and Hewlett-Packard Co. workstations.

PERFORMANCE: IS development staff increased 30% in 18 months. IS role switched from information processors to data architects, data engineers and systems integrators. New matrixed development organization created under IS.

ALUMINUM COMPANY OF AMERICA
Pittsburgh

GOAL: To let system users write own orders via EDI on PCs and Macintoshes so Alcopurchasing department can focus on big-ticket items.

STRATEGY: Built \$12 million VAX/VMS 10,000 users at more than 100 sites worldwide. Then roll out prototype client/server-based purchasing application based on PowerSoft Corp.'s PowerBuilder, an object-oriented development tool. Develop CASE and client/server skills via in-house training programs.

PERFORMANCE: More satisfied customers, faster orders, greater focus on large, profitable accounts.

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Distributed systems

CONTINUED FROM PAGE 102

But Morse says the next hurdle — perhaps the biggest of all — is either acquiring or developing the skills necessary to optimize network-based, enterprise-wide, client/server applications. Optimizing both application and network performance, according to Morse, is complex, "under-the-covers" work, requiring the skills of savvy network architects and experts in data access and database design.

"Sure, some of the development tools that are around today are easy enough for even users to learn how to use," Morse says. "But the database design and networking that must be done for applications to work well are skills that are few and far between."

Because it's tough to find qualified people, he continues, skills must be developed in-house, a time-consuming task. To that end, Alcoa continues to train applications developers in WANs and client/server topologies, as it has for the past several months.

For now, Morse is concentrating on the basics. "Right now, we're focused on building the infrastructure and trying to get developers' skills up," he says.

Mortgage Guaranty Insurance Corp.

No one can accuse Mortgage Guaranty Insurance Corp. of being timid in tackling distributed development.

Defying popular wisdom to "start small," the Milwaukee insurer dove into client/server development 2½ years ago with one of its backbone business applications, a mainframe-based under-

writing system used daily by hundreds of the firm's 1,500 employees.

Converting the application involved, among other things, replacing 3270 terminals with IBM Personal System/2 workstations running OS/2 and Windows, converting a Systems Network Architecture network to a WAN capable of routing multiple communications protocols and, last but not least, integrating expert system technology into the new Advanced Technology Loan Acquisition System, dubbed "Atlas."

John Seaman, director of systems services, says that finding a code generator or other suitable tool for a graphical user interface (GUI)-based environment was the first development challenge.

Because GUI-based applications involve about 10 times more code than traditional mainframe applications, such a tool was indispensable, he says.

The second hurdle was training mainframe-based Cobol applications programmers in PC-based development techniques.

"All of the development tools on PCs are different. The languages are different."

as are the tools to program, test and edit," Seaman says.

He continues, "Mainframers are used to the comforts of source-code managers, as well as a lot of infrastructure and called subroutines that do a lot of work for you. On the PC, we had none of this, so we were starting from scratch."

Developers and technical support staffers were also starting from scratch in learning how to use unfamiliar network diagnostic tools.



Mortgage Guaranty's Seaman dove into distributed development

James Schmitt

"New network hardware and software had to be learned, as well as mechanisms for updating all devices on the network with software changes. You could spend a year researching and developing the networking aspect alone," Seaman says.

Developers spent the first year not only acquiring new networking expertise but also learning the intricacies of the OS/2 operating system, developing prototypes of PC/mainframe connections and researching and evaluating various application development tools.

Five OS/2-based development tools were available in 1990, Seaman says, so Mortgage Guaranty chose Foundation for Cooperative Processing, a CASE tool from Chicago-based Andersen Consulting. The software was used to design screens and windows for Atlas' PS/2-based clients.

On the mainframe, which acts as a large file server under Atlas, a CICS program funnels data to a DB2 relational database. The two program components communicate via IBM's Advanced Pro-

gram-to-Program Communications (APPC) routines executed on the client side, where all edits and validation procedures are also done.

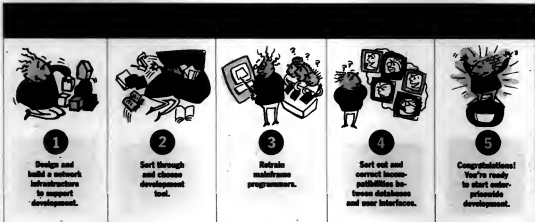
Thirty months and \$5.5 million later, Atlas today consists of 55 full-screen windows. The system has been running in production mode for a little more than three months, according to Seaman.

"For now, all of the work is done at the PC, and the mainframe is only housing the database," he explains. "But by doing just that, we have reduced mainframe utilization by a minimum of 20%."


In the long term, Seaman has plans to more fully use a distributed database environment. Instead of a CICS transaction and PC calling APPC, the PC will write to a database that it thinks is on the PC, Seaman explains.

"We would like to set it up so if the mainframe or communication lines are down, a server could process loans without the mainframe at all," Seaman says.

King is a free-lance technology writer based in Ridley Park, Pa.



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No easy answers from integrators

CONTINUED FROM PAGE 101

To be sure, each approach has advantages and disadvantages, notes Russ Talmouth, corporate methodology manager at DEC.

For example, licensing a proprietary methodology can help improve account control and boost revenue, he says. But it also requires large maintenance and upgrade expenditures and can be a competitive liability if the methodology is too rigid or incompatible with third-party approaches and tools.

DEC itself sells a CASE platform called Cohesion and is weighing the licensing of its internal Digital Program Methodology.

Open or closed?

Many customers are drawn to integrators with proprietary products, seeing them as concrete evidence that the services provider is conversant with the technology.

But those same customers, G2's Pflug says, are likely to find that other vendors' tools will not deliver the maximum performance and functionality under even the most open proprietary methodologies.

Andersen Consulting. Among the major integrators, Andersen has made by far the largest investment in products, offering its Method/1 methodology and a wide range of planning and analysis, CASE and project management tools under its Foundation umbrella.

Approximately 25% of its total integration engagements involve the sale of proprietary products, according to Don Dall, managing director of the Foundation line.

Software sales of \$60 million in fiscal 1992 were up 30% from 1991, making Foundation among Andersen's fastest-growing businesses.

Foundation competes heavily against CASE offerings from Texas Instruments, Inc., KnowledgeWare, Inc. and others. Andersen director of technology transfer Gower Ferguson acknowledges the potential for bias among consultants.

However, Ferguson insists that consultants are a fiercely independent lot who don't always choose Andersen products.

Ferguson adds that Andersen's

strengths in change management and strategic services and the firm's specific industry expertise are even more crucial than products in its applications development efforts.

Ernst & Young. Another member of the Big Six, Ernst & Young makes similar claims regarding its products and services.

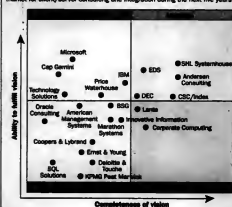
John Parkinson, Ernst & Young's chief scientist, says the firm's Navigator methodology "is as open as we could possibly make it." He adds that the firm's ability to team with third-party tools vendors is restricted only

do not perform systems and business re-engineering at the same time, believing that no one vendor can do both effectively.

EDS. EDS claims to have 50 documented client/server application success stories. Besides its EDS Systems Life Cycle methodology, which it has licensed to a few customers, the mega-integrator offers a consolidated data modeling tool (Incase), a reverse-engineering tool (Source Code Interviewer) and a work-flow analysis package (Apache).

The latter two software products

A handful of large, well-known players are best-positioned to dominate the market for client/server consulting and integration during the next five years



Source: Gartner Group, Inc.

CW Chart: Stephen Fischer

by its audit relationships with some of those vendors. About 50% of the firm's integration deals involve the licensing of Navigator, Parkinson says.

Utilize integrators such as DEC that have different organizations for systems re-engineering and management consulting, "there is no handoff between advisory groups here," Parkinson says.

A recent G2 study, however, suggests that most users still prefer to separate those functions. Some 57% of responding IS organizations said they

are usually bundled into IS services pacts, says Brad Rucker, systems engineering manager at EDS' strategic methods and tools group.

Rucker says Apache, in particular, addresses EDS' long-perceived weakness on the front end. "We're striking out at a broader [base of business]," Rucker says. "We're involved at the feasibility/consulting, applications development and back-end process management levels."

Rucker maintains that EDS is less tied to its own tools than are its major competitors.

He notes, for example, that EDS uses TPA CASE, product in its General Motor Corp. engagements.

"There are no one-stop shops," he concludes. "Everything must be organized around the customer's specific development environment. You have to be able to bring the strongest suite of tools to every deal."

Regardless of today's rhetoric, EDS, Andersen, DEC and SHL Systemhouse are expected to be among a handful of vendors that dominate commercial application development consulting during the next five years, predicts Bonnie Digrius, program director at Gartner Group, Inc. in Santa Clara, Calif. (see chart 1).

Mehler is a free-lance writer based in Jackson Heights, N.Y.



Field-office personnel have written more than 2,000 applications at The Michigan Department of Social Services. The Lansing-based agency uses more than 3,000 COTS workstations from Unisys Corp. at 140 central and field offices.

Among new client/server applications: assistance payments budgeting, opportunity training, licensing services and unified day care. Officials say productivity payoffs exceed \$40 million.

AGS Management Systems says it will release OS/2 and Windows versions of its first computer-aided software engineering (CASE) client/server development framework in the fourth quarter. An automated process management system handles estimating, project management, tools management and deliverables management.

The product encompasses Enterprise Architecture Planning Methodology, Information Engineering Methodology and more. For details, call (215) 265-1550.

James Martin Insight, Inc. announced a new video-based course titled "CASE Tools." Aimed at helping information systems professionals select the best tools, the course demonstrates leading products from Cadix Technologies, Inc., Computer Associates International, Inc., Easel Corp., IBM, Texas Instruments, Inc. and others. A commentary by James Martin also includes the state of the current CASE industry and predictions for the next 10 years. A three-month rental costs \$1,350. For more details, call (800) 586-0452.

XZT Software, Inc. has begun shipping Release 3.0 of the XVI Portability Toolkit and Version 1.1 of the XVI Design graphical, interactive design tool. The products let programmers design and create applications that will run on six graphical user interfaces (GUI) and 26 platforms without rewriting. Prices for Toolkit range from \$1,450 to \$4,400, depending on the GUI supported.

Pricing for Design runs from \$1,200 to \$4,400. For additional information, call (303) 443-4223.

ADVICE

Picking a solid partner

Bonnie Digrius, program director, Gartner Group, Inc.

"Many of these companies say they are doing a lot more [client/server development] than they really are. The real challenge is in sifting the chaff from the wheat."

Oliver Pflug, analyst, G2 Research, Inc.

"IS managers should try to get all the references they can. Has the integrator done this type of thing before? Have they brought similar projects in on time and on budget?"

Ira Sager, principal, Para Technology, Inc.

"What is the service provider bringing to the party? Keep in mind that its methodologies and tools are secondary to its understanding of your business goals. Like operating systems, methodologies should be transparent to the user."

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 - 27. Systems Dev. Mgr., LAN Mgr., PC Mgr.
 - 28. Dr. Mgr. Sys. Development, Syst. Architect
 - 29. Programming Management, Software Developer
 - 30. Engineering, Science, R&D, Tech. Mgr.
 - 31. Sys. Integrator/VAR/Consulting Mgr.
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IN DEPTH

High-tech juice keeps electronic emporiums humming

UNTIL RECENTLY, MARKETS for electronic buying and selling were like business computers in the 1960s. Examples of them were well-known, but they were not numerous enough to make a large impact on general business practices. Airline reservation systems come to mind.

What is striking today is the surge in the number of new electronic market systems, their creative use of diverse technologies — modem, fax, voice response and satellite transmission — and the disparate industries they serve. The systems that follow illustrate the breadth of the emerging electronic commercial world.

No system here is any more or less likely to raise legal problems than another. But as these systems and others like them cause electronic commerce to proliferate, an understanding of the law of electronic trade becomes essential to conducting business.



AMXL. The American Information Exchange, or AMXL, is a computerized forum for buying and selling data in the broadest sense of the word. Shunning the term "bulletin board," the Mountain View, Calif., organization bills itself as an "on-line marketplace" for software, research data, newsletters and consulting services.

Its greatest success to date is in the object-oriented software field. Writers of To page 112

BUY, SELL & SUE?

Computerized trading systems could squelch, rather than promote, competition

BY BENJAMIN WRIGHT

The tradition of the marketplace — in which buyers and sellers convene in town squares, farmers markets and shopping malls to haggle and trade — is a long-standing one. Today, this concept has been updated. Remote buyers and sellers, equipped with computers, telephones and fax machines and using electronic mail and electronic data interchange, can meet and do business in "virtual marketplaces."

These multitember market systems, the most well-known of which are airline reservation systems, are using technology in innovative ways (see story at left). But as more and more electronic emporiums spring up, legal issues arise with them.

Computerized trading systems change the dynamics of trade and the distribution of power within markets. The systems can foster competition, but if

Wright is a Dallas-based attorney and author of *The Law of Electronic Commerce: EDI, Fax and E-mail* (Little, Brown & Co.). This article does not provide legal advice for any specific situation.

abused, they can also stifle it.

Antitrust laws promote competition in the marketplace by outlawing certain practices. The laws are complex, and the practices they prohibit are defined in vague terms such as "unreasonable restraint of trade." It is difficult to find concrete rules about what is and is not allowed under the laws.

Participants in electronic marketplaces need to be alert to the types of antitrust problems that can crop up. The following stories, while not all involving electronic marketplaces per se, pinpoint key legal issues to be aware of:



• **Market exclusion:** Beware the group boycott. Antitrust laws prohibit companies from colluding to exclude a competitor from a market.

In *Silver v. New York Stock Exchange*, for example, the U.S. Supreme Court said the expulsion of a member from an industry group without a legitimate reason (such as failure to pay dues) could be an illegal group boycott, particularly if the group commands a large portion of a market. In this case, the stock exchange had severed a few brokers' telephone access to the trading floor, without explanation or a fair hearing. The court condemned

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this as a group boycott.

The court in *U.S. v. Realty Multi-Lit, Inc.* disapproved of a powerful real estate broker's multiple listing service in Georgia, which had erected unreasonable barriers to new membership. Newcomers had to present favorable reports on their credit and business reputations, maintain customary office hours and pay admission fees apart from the cost of membership. The court feared the rules excluded new competitors from the brokerage market.

Lesson: Participants in electronic marketplaces should be careful about blacklisting competitors or setting unreasonable rules. Some form of "due process" can be adopted, but it should not be just a pretext for strangling competition.



***Market bottleneck:** Keep it open. In airline law, an "essential facility," or bottleneck, refers to a resource that competitors must use to participate in a market. If a company seizes an indispensable bottleneck in a market, it has an obligation to open that bottleneck to competitors.

In the 1970s, airlines in Western states formed two electronic funds clearinghouses but then refused to let savings and loans (S&Ls) use them. The S&Ls convinced the U.S. Department of Justice that the clearinghouses were market bottlenecks. The S&Ls ordered access to clearinghouses for funds transfers, but it would have cost too much to construct their own.

After the Justice Department brought suit, the banks granted the S&Ls the same use of the clearinghouses the banks had.

In the case of an airline reservation system, the problem was not that the airline operating it, United Airlines, refused to let competitors take reservations through it. Rather, the problem was that United discriminated against competing airlines using the system. First, United charged vary-

Buyer and seller beware

When traders agree to buy and sell, they are forming legal contracts, even though they may not be exchanging paper. Occasionally, when the parties cannot cooperate, those contracts wind up in court. Buyers and sellers in computerized markets can avoid that fate with some foresight.

In *Bush Industries Corp. v. Mast Industries, Inc.*, for example, a buyer and seller fought an expensive lawsuit about five failed purchase orders covering \$105,330 worth of textiles. The issue was whether the purchase orders constituted binding contracts.

To avoid misunderstandings, buyers and sellers in computerized markets should think through the process by which electronic orders are matched with electronic acceptances so that they know precisely when they are

bound by a contract. Without a clear statement in messages or in general trade rules in the market, it can be ambiguous which messages are offers, which are acceptances and at which point the parties become obligated.

Traders should also consider the terms and conditions that go along with their electronic contracts to ensure that the terms are desirable. A dispute between American Multimedia, Inc. and Dalton Packaging, Inc. centered on whether terms on the back of a purchase order were effective if the buyer faxed just the front side of the order to the seller. (The court ruled that the terms were effective because the seller was well aware of them.)

Because of its concern over terms and conditions, some participants on the National Gas Network feel compelled to transmit lengthy legal boilerplate terms with electronic messages.



***Price fixing:** Give not even the appearance. The Airline Tariff Publishing Co. (ATP) and its members have suffered a recent barrage of price-fixing allegations. ATP is an electronic fare clearinghouse that the airlines use to communicate airfares throughout the industry. Allegedly, major airlines have abused this communications facility to fix prices. Supposedly, some airline members, using arcane computer codes, have signaled prices to others. Critics have also charged that the airlines use ATP to coordinate fare changes by sending up bid balloons to see how rivals react.

These allegations have resulted in an ongoing Department of Justice investigation and a related class-action lawsuit. The airlines have tentatively settled the class action by agreeing to make a \$44 million cash payment and to issue \$388.5 million in discount coupons to travelers. Still, the airlines deny any wrongdoing, and it is still unclear whether they violated the law.

Lesson: Competitors need to be very careful when they interact in an electronic environment. Even the appearance of collusion can be damning.

Competitors should have antitrust counsel review their plans before exchanging competitive information such as prices, discount structures, production schedules, market statistics or customer lists. Rules of trade in electronic markets may be necessary to warn participants against abuses.

And it may be prudent to erect information barriers (such as blind bidding mechanisms) to keep competitors from seeing sensitive information.



***Standards setting:** Stick to the knitting. When an association of companies sets up an electronic market, it often must establish standards of communication, such as technical protocols, and rules of trade, such as the process for requesting, making and accepting bids. Likely, the

standards and rules will be formulated by committees of company representatives.

There is nothing wrong with industry groups setting standards for legitimate purposes. But the antitrust laws do forbid using the standards process as a weapon against competition.

Consider the fate of Allied Tube and Conduit Corp., a maker of steel pipe for electrical conduits. Its competitor, Indian Head, Inc., had developed a new conduit made of plastic. The National Fire Protection Association had for years certified steel pipe as safe, and in 1980, Indian Head petitioned the association to certify plastic pipe as safe, too. Certification required a major vote at the annual conference.

Sensing a threat to its business, Allied spearheaded a conspiracy to reject Indian Head's petition by packing the annual conference with bogus voters.

Allied won the vote but lost Indian Head's ensuing lawsuit. The courts held that Allied had twisted an industry process for setting legitimate industry standards into a competitive weapon. The courts levied \$114 million in damages against Allied and its co-conspirators.

Lesson: Standards committees of participants should limit their purpose strictly to setting legitimate standards—communications protocols, trade rules, safety codes and so on—all in a spirit of due process for all industry members. They should not set rules intended to make it difficult for this or that class of competitors to take part in the market. *

Don't give up records

How a dispute is resolved among traders can depend on the records available to show what transpired. But who keeps the records?

AMIX, for one, keeps permanent records of the communications it handles. If a dispute goes to arbitration, the arbitrator has the authority to view all relevant records.

The argument for allowing a market clearing service provider such as AMIX to keep records is that the provider is usually neutral and therefore unlikely to falsify the records. That makes the records more credible.

In the long run, however, the policy of having service providers keep records raises problems. It can be unclear who owns the records and what the confidentiality of those records is, particularly in terms of disclosing them to government agencies such as tax authorities.

For that reason, larger electronic traders may prefer to keep their records in-house. They can prevent those records from being falsified by ensuring that record creation and storage are overseen by people such as internal auditors, who are independent from people such as purchasing managers, who negotiate the recorded transactions.

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Continued from page 109 particular software objects (for example, a piece of code that writes data to a disk) can load them on the system and sell them. If a buyer bites, he downloads the code. AMIX then debits his credit card, cuts a check to the seller and keeps a commission.

AMIX members seek their trading part-

ners by posting public notices or broadcasting private requests for bid to selected individuals. Electronic responses can be public or private.

The organization prides itself on its ability to make a market for small units of data. "Our goal is to shave transaction costs to the bone. For that reason, it is profitable for both us and our customers to have users selling bits of code for even as little as one dollar," says Gayle Pergamit, director of marketplace development at AMIX.

One of those "transaction costs" AMIX has anticipated is the occasional dispute, which might involve payment for or quality of the information sold. "AMIX designed a binding process of arbitration to speed the resolution of disagreements and minimize the associated costs," Pergamit says.

All AMIX members must agree in advance to abide by the arbitration procedures explained on the back of the AMIX user manual. In a dispute, the unhappy members must exchange messages within specified time frames to try to resolve the matter on their own. If that fails, AMIX assigns an employee to help the members settle their differences. And if that fails, AMIX appoints an arbitrator, who makes a legally binding decision and assesses an arbitration fee on one or both members.

Although AMIX has yet had no occasion to use the arbitration rules, employees have conducted mock arbitration drills. Pergamit explains that the presence of the arbitration rules cuts down on the potential for litigation that is present in any commercial deal.



Natural Gas Network. The Natural Gas Network links up owners of natural gas with utilities—principally in the Northeast—that buy gas. Operated by Artis Ltd. in Lexington, Mass., the Natural Gas Network routes buy/sell or other transactional messages among 57 subscribers via two separate communications channels. First, the sender transmits a message via modem to the network's data center, then the network broadcasts the message simultaneously to target recipients via satellite.

Because a trader can specify how much subscriber or subscribers are to receive its message, it can, with telephone-like privacy, make successive sweeps through the market. A seller, for example, can offer gas at a starting price, make a few sales and then offer a lower price just to buyers who declined the first offer.

In a sense, the Natural Gas Network functions like a closed telex network because received messages are printed automatically by dedicated printers. According to Charlie Stone, vice president for sales and marketing at Artis, the purpose of the printing is "to attract the recipient's attention. We want something that interrupts and makes noise." The printouts are thus more likely to be read than messages on computer bulletin boards. Furthermore, the printouts serve accounting and legal record-keeping purposes.

The Natural Gas Network maintains that because the gas market shifts rapidly, satellite distribution works better than fax. Network messages can be broadcast to dozens of recipients simultaneously.

A fax machine in broadcast mode, on the other hand, "works in a sequential fashion," Stone argues. "It can take hours to broadcast 40 faxes. A broadcast fax service is better than a fax machine, but even that service relies on phone lines that can have busy signals."



World Trade Center Network. Rather than trying to outdo fax, World Trade Center (WTC) Network exploits it. WTC Network is a sophisticated bulletin board sponsored by the World Trade Center Association in New York (an association of more than 140 trade centers) and operated through the General Electric Information Services (GEIS) value-added network.

International traders from 75 countries place ads on the board to buy or sell products ranging from machine tools to sheep. Members of the participating associations may access the ads by modem; nonmembers can phone a 900 number to ask that selected ads be faxed to them. Seventy-five print publications throughout the world also reprint summaries of the ads, which instruct readers how to obtain more information via modem or the 900 number.

Traders may accept the advertisement offers by direct fax or phone or by private electronic mail via GEIS. Although "a lot of people like to send faxes in response to ads," says Anna Jankowsky, marketing manager at WTC Network, "E-mail is very cost-effective."

WTC Network informally polices trading on the network. According to Jankowsky, "when advertisers place ads, they receive a notice that if they have problems with any computer network users, they should contact us and we'll investigate. We've only received one or two complaints, however."

BENJAMIN WRIGHT

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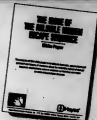


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MANAGEMENT

The drug's the thing



Vida Kreitz

With their focus on research, biotech firms keep IS staffs small and computer managers juggling functions

going out and buying new software in a Macintosh version, we will," he says.

But giving scientists whatever hardware, software and support they demand seems to solve only some problems while creating others. For starters, hardware and/or software standards are all but nonexistent at many of these young enterprises, where off-the-shelf software and workstation- and network-based information systems are the norm.

Secret persuasion

At San Francisco-based Genentech, Inc., senior IS director and scientist Polly Moore is looking to standardize around Apple Computer, Inc. machines for the research scientists. She says gentle persuasion is her secret to establishing standards at the 16-year-old company.

"My department manages by setting up an environment to lead users in a particular direction," Moore explains. "We try to do a very good job of supporting the Apple product line by having an Apple repair shop with quick turnaround time, a help desk and by producing [software] documentation."

She ensures that users, who are free to buy either PCs or Apple computers, typically pick Macintoshes because "they'll get all of this support. If they pick something else, they are there's not the same kind of help. In the end, 95% of users pick the easy way out," Moore says. Genentech, with some 2,300 employees, is one of the oldest and largest biotech companies.

Few and far between are biotechnology firms such as Centocor, Inc. in Malvern, Pa., which more than five years ago adopted and implemented a single hardware platform and network standard, in this case Digital Equipment Corp. gear. But such standardization isn't a cure-all.

Were he to choose platforms all over again, IS Vice President Kim Pol

Continued on page 116

INDUSTRY CLOSE-UP IS in Biotech

BY JULIA KING
SPECIAL TO CTV

At Neogen Corp., Christopher Dircks isn't just systems manager. He's the entire computer department. Besides computers, Dircks is also responsible for the telephone system, security and lab equipment at the Barnford, Conn.-based biotech firm.

"I spread myself thin, and sometimes things don't get done," he admits. "But we can't get additional IS staff until the importance of systems is recognized [by upper management]."

Welcome to computing in the biotech industry, where drugs are king and IS is often a lonely (and versatile) servant.

Because the emphasis is on science and research, not information technology, these computer depart-

ments tend to be small. As a result, the manager, who is often a former scientist, is pulled in different directions.

Many users — also scientists — are personal computer-literate and can be demanding. To top it all off, there is relatively little stability in the fast-paced field. Companies can double or even triple in size or disappear altogether in the span of several months.

"We are growing so fast and the need for computers is so great that it is like a moving target," says Wendy Baker, a senior database analyst and project manager of the laboratory information management system at Syngene, Inc. in Boulder, Colo. "The way we need to react and make quick decisions is different from other industries."

Be-all

These characteristics combine to put a lot of pressure on the IS manager, who must deal with the lack of standards and government reporting pressures while trying to be a jack-of-all-trades.

"I started out with responsibility

for anything that plugs into the wall," says one IS manager who asked to remain anonymous. "And even now, I don't think management would think twice about asking me to pick up payroll or some other function."

Information technology is just not a priority from a top management point of view, says Michael Hawotte, a consultant at A. T. Kearney, Inc. in Chicago who specializes in the biotech and pharmaceutical industries. "People at the top tend to be very research-oriented," Hawotte says. "They don't understand that technology will make them much stronger in the long term."

Even so, IS departments are ensuring that users don't suffer.

At Neogen, in addition to giving scientists what they want, which is often PC-based software, Dircks has positioned IS as a support department that "derives its satisfaction from producing a seamless flow of data."

Face it, Dircks says. The scientist always wins. They always get what they want. "So, he reasons, why not try to make them as happy as possible by supporting them?" If that means

EXECUTIVE
TRACK

Richard T. Brant is the new director of global management information systems at **The Reader's Digest Association, Inc.** Brant was formerly a partner at Arthur Andersen & Co. At Reader's Digest, he will be responsible for financial, production, editorial and human resources systems development in the U.S., as well as systems development support in the Far East and Mexico for the Pleasantville, N.Y.-based publishing firm.

Don A. Hayes is the new vice president of information technology at Stamford, Conn.-based **GTE Telephone Operations**, a unit of telecommunications giant **GTE Corp.** He succeeds **Donald E. Peoples**, who will retire in 1993.

Hayes, 54, was formerly president of the firm's **GTE Data Services** unit.



James A. Williams has been named vice president and manager of services at **Los Angeles-based Sunbeam Bank California**. A 20-year veteran of the banking industry, Williams came to Sunbeam—a \$7.2 billion bank that is reportedly the state's sixth largest—from **Security Pacific Automation Corp.**

Thomas Gildes, vice president of business IS at **Chicago-based Heilex Curtis Industries, Inc.**, has been named the **Society for Information Management's Chicago Chapter IS Executive of the Year**. The award salutes Gildes's spearheading of an automated sales and marketing system that allows the cosmetics manufacturer's IS staff to supply internal clients with on-the-spot analysis of product income and volume projections.

Charles L. Pedersen has been named executive vice president at **San Francisco-based Union Bank**, where he heads the operations and automation group. He is credited with bringing the driving force behind the bank's forays into electronic banking.

Outsourcing a natural for oil disaster unit

Nonprofit corporation finds EDS a good partner to its standby 'firehouse-like' emergency status

BY MITCH BETTS
CHICAGO

WASHINGTON, D.C. — For many companies, the outsourcing decision is pure agony. But for **Marine Spill Response Corp. (MSRC)**, the company's unique mission made the decision to outsource the information systems function relatively easy.

The nonprofit corporation was formed in 1990 to be the oil industry's emergency response unit for disasters like the **Exxon Valdez** spill of 1989 [CW, June 15]. Under the best-case scenario, therefore, logistics and data processing activity at MSRC will add up to a few peaks separated by long valleys.

"We're like a firehouse," explained IS director **Berkowitz**. "We have to have a large investment in equipment and people that don't do anything, normally. They're just training,

playing checkers and patting the firehouse dog Sparky — until there's a fire."

It would make no sense for MSRC to acquire mainframes and a computer infrastructure for emergency cleanup efforts and then have that infrastructure go unused most of the time, Berkowitz said. With outsourcing, "I can turn up the heat when I need it and pay for what I use, when I use it," he said.

MSRC signed its five-year outsourcing contract with **Electronic Data Systems Corp.** in October 1990.

Actually, Berkowitz said, the basic decision to outsource the IS function was made by a blue-ribbon industry panel after the **Valdez** spill. The decision has worked out well because MSRC and EDS have developed a close partnership, Berkowitz said.

In fact, he adds, the relationship is so close that the only way an observer can tell MSRC and EDS employees apart is by the

company name on their paychecks. The EDS account manager, **Jay DeFevre**, is an active participant in MSRC management meetings, and Berkowitz has special access to EDS management.

EDS and MSRC systems.

"I've got to be honest: A one-person shop is tough. It is possible, but it takes a lot of one individual's life," Berkowitz said.

But don't expect a ballooning

"WE'RE LIKE A firehouse... just training, playing checkers and patting the firehouse dog Sparky — until there's a fire."

BARRY BERKOWITZ
MSRC

However, Berkowitz also keeps a watchful eye on EDS prices. "I constantly check with other users and trade publications to see if we're getting a good deal," he said. "If I see a lower price somewhere else, I ask EDS to get me that price."

For most of the last two years, Berkowitz served as virtually a one-man IS department. If you count only the MSRC staff, but one month ago he hired an IS manager to help with the job of monitoring the performance of

IS staff at MSRC. The former U.S. Air Force officer is a firm believer in a lean organization.

Berkowitz said he probably could justify an IS organization of 10 MSRC staffers, but that would create duplication, with MSRC and contractor employees paired off doing the same work. "Instead of having a meeting with five people," he noted, "you'd have a meeting with 10 people, and you'd have a lot of redundancy with people walking around the halls together."

libel elaborate data handling procedures. At Centocor, a separate applications development staff with expertise in managing clinical data serves the company's R&D arm.

For the time being, "the focus at most biotech companies is on R&D and getting capital, not on business systems," Pollock says. "That's because for the first 12 years and \$200 million, you're not selling anything."

The first 12 years comprise seven years of basic research and

five of clinical trials. Pollock says most biotech companies don't begin to think about IS in any kind of strategic way until after receiving regulatory approval.

And while difficult for IS managers, this is how it should land probably always will be, Hawotte says. "Biotechs have a wait-and-see attitude about IS because they have to wait and see if they have a product," he says.

King is a freelance writer based in Riskey Park, Pa.

The drug's the thing in biotechnology IS shops

CONTINUED FROM PAGE 115

lock says, "the client/server platform would be very attractive." Any changes will likely mean additional work. Currently, Centocor is in the process of migrating some applications from DEC VAXclusters to PCs, he adds.

While companies with diverse software, hardware and networks are managing, potential problems loom ahead. These include not only tying together disparate research and development systems but also integrating them with newly implemented business and manufacturing systems capable of tracking raw materials and finished inventory by lot and location.

Dirty data syndrome

Multiple computing platforms and incompatible software packages are also products to compromise data accuracy and integrity, which are critical in the highly regulated biotechnology industry.

"With the [Food and] Drug Administration, the accountability issue is very significant," says **Bob Myers**, vice president of information science at U.S. Bioscience, Inc. in West Conshohocken, Pa. "We have to be able to survive an FDA audit. That may mean recreating a document sub-

mitted two or more years ago."

Indeed, FDA reporting requirements can turn IS departments upside down. That's what happened at Centocor some five months ago, when the regulatory agency ordered the company to conduct another round of clinical trials and resubmit its product application. The request took the company by complete surprise, Pollock says.

"We had geared up and had the infrastructure in place to prepare for product launch, when I happened before the first salesperson was hired. Then, we had to change our plans and the sales automation system was scrapped," he says.

Now, salespeople hired to sell the new product are instead assisting with the review of clinical trials, he says.

Biotech firms have taken a variety of approaches to meeting stringent data accuracy and integrity requirements. Syngene, for example, maintains data on clinical results and quality control on a separate PC-based lab information management system.

Meanwhile, U.S. Bioscience has incorporated error-checking capabilities into all data management software and has estab-

Anatomy of biotech IS

Size of IS department:

- Ranges in size from one person to a handful during R&D stage.
- IS departments grow once products are available.

IS professional background:

- Many technology overseers have a knowledge of PCs and networking rather than minicomputers.
- IS staff members are often scientists with computer skills.

Hardware:

- During R&D stage (prior to product approval), most biotech firms use Macintoshes, PCs and LAN-based workstations.
- The largest piece of hardware would be a DEC VAX.

Applications software:

- Most biotech firms buy rather than build applications software.
- Few biotech firms have an applications development staff.
- Customization is done by chief technology overseer.

User base:

- Computer literate.
- Scientists with specific needs for systems and software.
- High maintenance requirements.
- Good understanding of biotech business.

Miscellaneous:

- Few, if any, standards.

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No shortcut to client/server

BY MITCH BETTS
COWI

ARLINGTON, Va. — Building client/server systems requires combining a bunch of immature products that seldom work as advertised — but that's not all. It also requires a total revamping of the information systems department, according to Paul Hamel, vice president of systems and planning at Tetrax Financial Corp.

The Providence, R.I.-based company built its first client/server system in 1991; it found the experience nothing short of traumatic. "We went closer to the bleeding edge than we should have," Hamel said.

"We underestimated the degree of complexity and risk we were taking on," he explained at a client/server conference held here last month. "We had sufficient problems with the implementation that my career was on the line — as it should be."

Happy ending

After several missteps and schedule slippages, the client/server project eventually arrived at a happy ending. But Hamel shared

his company's pioneering experience — including details about "where we took the arrows and where the blood flowed" — at the conference, which was sponsored by the Technology Transfer Institute and Arte Consultants, Inc.

Hamel said he learned "the hard way" that client/server sys-



tems cannot be built by a traditional IS department that is divided into hardware, software and networking units and staffed by specialists in each technology.

Client/server systems are actually complex webs of hardware and software that are inextricably linked to each other, Hamel said. Therefore, the IS department needs to reorganize as a "consul-

tancy" that assembles a development team made up of multi-talented generalists.

The top skills needed by the client/server development team are project management skills and systems integration skills, Hamel said. "Our goal is that everyone in our IS organization will be a systems integrator," he said, with each staff member having at least a basic understanding of all the relevant technologies.

However, the over-confident Hamel acknowledged that he has yet to figure out how to apply this "consultancy model" to the labor-intensive support and maintenance of client/server systems.

Eventually, the innovative system turned out to be a "competition-beating" success for the business unit, as well as the scoreboard for a second client/server project now under way, Hamel said.

But Hamel warned other users that the client/server field has abundant risks, including shifting standards, poor disaster recovery, immature products (especially on the client side) and consultants who are self-proclaimed experts but lack hands-on experience.

Ohio State to study keyboard stress injuries

BY MITCH BETTS
COWI

COLUMBUS, Ohio — Ohio State University's Biodynamics Laboratory has received a \$22,000 grant to study the biomechanics of keyboard work that may provide clues about how to prevent repetitive stress injuries (RSI).

This class of injuries is spreading quickly, according to federal government data, and has become a major issue not only for those who suffer from it but also for managers, increasingly expected to alleviate or prevent it (CW, Sept. 21).

The grant was made by the Office-Related Cumulative Trauma Disorder Research Committee, a group of 14 companies that is promoting RSI research to help employers and equipment manufacturers combat the problem.

"Little is known about the forces and stresses on the hands and forearms that occur when typing at a computer keyboard," said William Marras, director at the Biodynamics Laboratory. "The results will be helpful in under-

standing the optimum keying techniques, operator postures and the relationship between them and keyboard design."

The study will include field analysis of how computer users type in real job situations, laboratory research and development of a biomechanical model of the stress on hands and wrists.

LITTLE IS known about the forces and stresses on the hands and forearms that occur when typing at a computer keyboard."

WILLIAM MARRAS
BIODYNAMICS LAB

The committee includes Aetna Life & Casualty Co., Apple Computer, Inc., Bank America Corp., Cigna Corp., IBM, Key Tronic Corp., McClatchy Newspapers, Inc. and NCR Corp., among others.

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CALENDAR

OCT. 25-31

Fourth Annual Conference and Expo on Disaster Recovery and Business Resumption Planning, Atlanta, Ga. Oct. 25-28 — Contact: John Baran, Delware Valley Disaster Recovery Information Exchange Group, Inc., Mt. Laurel, N.J. (609) 773-7702.

The 13th Annual Treasury Management Conference, San Diego, Oct. 25-28 — Contact: Margaret Van Pelt, Treasury Management Association, Baltimore, Md. (301) 907-2802.

Breakthrough '93 Conference and Exhibit, Tampa, Fla. Oct. 25-30 — Contact: Jule International, Palm Verde Estates, Calif. (508) 373-3033.

The Society for Imaging Science and Technology (SIST) Annual Meeting/Conference on Advances in Imaging/Printing Technology, Williamsburg, Va. Oct. 25-30 — Contact: S&T, Springfield, Va. (703) 642-9001.

Electronic Messaging '93, San Francisco, Oct. 26-28 — Contact: Electronic Mail Assoc. San, Arlington, Va. (703) 875-8025.

Strategic Information Planning Conference, Orlando, Fla. Oct. 26-28 — Contact: Technology Transfer Institute, Santa Monica, Calif. (310) 394-4005.

American Society for Information Sciences (ASIS) Annual Meeting, Pittsburgh, Oct. 26-29 — Contact: Richard B. Hill, ASIS, Silver Spring, Md. (301) 655-0999.

Interapp '93, San Francisco, Oct. 26-30 — Contact: Interapp Co., Mountain View, Calif. (415) 943-2099, Ext. 2502.

Total Quality Management '93 Conference and Exhibit, Chicago, Oct. 27-28 — Contact: Pat Jones, Society of Manufacturing Engineers, Dearborn, Mich. (312) 271-1500.

Outsourcing the Help Desk Conference, Colorado Springs, Oct. 27-30 — Contact: Help Desk Institute, Colorado Springs, Colo. (719) 523-4138.

Information Security Symposium, Toronto, Oct. 28-30 — Contact: Datapro Canada, North York, Ontario (416) 496-3315.

Eduscan '93, Baltimore, Oct. 28-31 — Contact: National Trade Publications, Inc., Alhambra, Calif. (909) 485-4500.

European Software Business Development Conference, Boston, Oct. 29 — Contact: Laurie Maria, Communications Events, Inc., Norwalk, Conn. (203) 847-0331.

Expo Comm China, Beijing, Oct. 30-Nov. 4 — Contact: Wendy Pang, E. J. Kinnor & Associates, Inc., Hong Kong (811) 5773-345.

NOV. 1-7

Conference on Organizational Computing Systems, Milpitas, Calif. Nov. 1-4 — Contact: Association for Computing Machinery, New York, N.Y. (212) 889-7440.

Technology and Innovation in a Global Economy, San Francisco, Nov. 1-4 — Contact: David Fourman, The Institute of Management Sciences, Farnborough, U.K. (44) 274-2525.

Network '93, New York, Nov. 1-4 — Contact: Network '93, New York, N.Y. (212) 889-7440.

National Sales Users Group, San Francisco, Nov. 2-6 — Contact: National Sales Users Group Headquarters, Chicago, Ill. (312) 253-6894.

The Users PFI Users Group, Florida, Nov. 4-6 — Contact: Lynn Girard, Users PFI, Medford, Pa. (483) 243-4022.

The 1993 Harvard-Business Review Conference on Business-Industry Information Technology Trade and Investment, Cambridge, Mass., Nov. 5-6 — Contact: Ralph Cohen, Resurgence Conference Group, Weymouth, Conn. (203) 321-4315.

Marketing the IT Organization Internally, London, Nov. 5-6 — Contact: Chatter & Associates Consulting, Inc., Bedford, N.H. (603) 424-7373.

Users Technology Symposium, Boston, Nov. 6 — Contact: Users Corp., Blue Bell, Pa. (215) 956-6413.

Fundamentals of Computer Law Conference, Santa Clara, Calif., Nov. 6-7 — Contact: Computer Law Association, Pacific, Va. (703) 560-7747.

NOV. 8-14

Health '93 Conference, New Orleans, Nov. 8-11 — Contact: Managing Apple Computers in Information Systems, Chicago, Ill. (312) 646-4610.

Share '93, Tampa, Fla. Nov. 6-11 — Contact: Share Headquarters, Chicago, Ill. (312) 646-4610.

James Martin World Seminar with Dr. Carmo McCue's Corporate CASE Tutorial, New York, Nov. 9-13 — Contact: Eastman International, Inc., Chicago, Ill. (312) 546-7000.

Symposium '93, Anaheim, Calif., Nov. 9-13 — Contact: Westgroup Publications, Inc., Boston, Mass. (617) 342-5168.

U.S. Society of Mining Users (SSMUS), Boston, Nov. 9-13 — Contact: USMUS, Chicago, Ill. (312) 482-3886.

AutoNet '93, Detroit, Nov. 10-12 — Contact: Society of Manufacturing Engineers, Dearborn, Mich. (313) 271-1500.

Society of Motion Picture and Television Conference and Equipment Exhibit, Toronto, Nov. 10-13 — Contact: Technology Solutions, New York, N.Y. (212) 503-9902.

Voice '93, Austin, Nov. 10-13 — Contact: Voice '93, Houston, Texas (713) 974-6007.

Virus Research Conference, Washington, D.C., Nov. 11-13 — Contact: Virus Research, International Computer Security Association, Washington, D.C. (202) 364-6252.

Perspectives on Decision Support and Executive Information Systems for the '90s Conference, Cambridge, Mass., Nov. 12-13 — Contact: Decision Support Technology, Inc., Cambridge, Mass. (617) 354-6400.

13th Annual Eastern American MGR/AT&T Computer Users Conference, Lake Harmony, Pa., Nov. 12-13 — Contact: Frank Whalen, Times Mirror Trading Machine Co. (713) 673-7104, Ext. 235.

NOV. 15-21

Information Industry Association 1992 Annual Conference "Knocking Down Info Walls", San Francisco, Nov. 15-19 — Contact: Information Society Association, Washington, D.C. (202) 439-4382.

Guide's 1993 Conference, Anaheim, Nov. 15-20 — Contact: Guide International Corp., Chi-

cago, Ill. (312) 644-6810.

Trademarking, Maintaining, Upgrading PC Seminar, Fort Lauderdale, Fla., Nov. 16-17 — Contact: Quest, Spotswood, N.J. (908) 253-2027.

International Security Systems Symposium and Exhibition, Washington, D.C., Nov. 16-18 — Contact: Keras & Associates, Bethesda, Md. (301) 996-7000.

19th Annual Computer Security Conference and Exhibition, Chicago, Nov. 16-18 — Contact: Computer Security Institute, San Francisco, Calif. (415) 905-2380.

Comdex/Fall '93, Las Vegas, Nov. 16-20 — Contact: Comdex/Fall, The Interface Group, Needham, Mass. (617) 440-6900.

ISDN/Broadband '93, Boston, Nov. 16-20 — Contact: Information Communications, Inc., Boston, Mass. (617) 232-2111.

Transaction Processing Networks Conference, Washington, D.C., Nov. 17-18 — Contact: Telecommunications Reports Conference Department, Washington, D.C. (202) 842-6530.

The International Computer Training Association, Orlando, Fla., Nov. 17-19 — Contact: International Computer Training Association, New York, N.Y. (212) 553-5668.

Unicom '93, Washington, D.C., Nov. 17-19 — Contact: North American Telecommunications Association, Washington, D.C. (202) 395-4860.

Conferences, Orlando, Fla., Nov. 19-20 — Contact: Info, Chicago, Ill. (312) 634-3500.

NOV. 22-28

OpenForum '93, Utrecht, Netherlands, Nov. 22-27 — Contact: Unicom, Santa Clara, Calif. (408) 995-4840.

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COMPUTER CAREERS

How hard are you working to bring home the bacon?

BY HILL VITTELLO
SPECIAL TO CIO

Napoleon frequently worked 16-hour days, and he expected his top counselors to exhibit a stamina and zeal equal to his own. At a meeting late one night, when the counselors began to doze off, Napoleon reprimanded them: "Do let's keep awake, citizens. It's only two o'clock. We must carry our salaries."

If you are putting in marathon days—and nights—to justly collecting a salary that probably has not risen greatly since the recession began, you are not alone.

In a recent *Computerworld* survey of 1,478 information systems managers and professionals, respondents said they are experiencing higher levels of stress than ever before, primarily because of increased work loads, mounting business demands and budgetary constraints.

Difficult to prove

So, are you working as hard as you think—that is to say, several times harder than anyone else you know? The answer is: May-

be, but it would be hard to prove.

Actually, at least some of the scanty documentary evidence is against you. If the length of a workweek is any indication of how hard individuals work, then people in the computer industry have it easy, according to the U.S. Bureau of Labor Statistics.

In its most recent estimates based on a 1991 survey of various industries, the bureau reported that systems analysts, program-

much-discussed book, *The Overworked American*, Juliet B. Schor wrote that the typical American works 47 hours each week. That is a total of 154 more hours per year than 20 years ago—the equivalent of an additional month of work every year.

The American Productivity and Quality Center, a nonprofit association located in Houston, that came up with slightly higher figures.

HOW OFTEN DO you find yourself resolving a technical or systems implementation issue while showering or supposedly listening to your significant other?

L. PAUL OUELLETTE
OUELLETTE & ASSOCIATES

mers and engineers work an average of 40.2 hours per week, compared with accountants, bank executives, human resources executives and marketing executives, who average 44.1 hours per week.

Other research suggests that these averages may be on the low side, however. In her recent and

More than 40% of those responding to a survey on work habits said they worked more than 50 hours a week. Nearly 63% of top managers reported that they regularly clock 50-hour weeks.

This survey showed that people in manufacturing work the longest workweek—nearly 46%

work more than 51 hours, compared with 37% of those in the service sector and 28% in the public sector, who report the same number of hours per week.

Of course, measuring how hard people work based on the length of time they spend at the office does not account for how productively they use that time, how well they perform and the work's difficulty. In fact, so many variables exist that it is tough to compare how hard two different IS professionals work, let alone assess how their work loads compare with people in other professions.

Who works harder?

"We're at a loss to find any benchmarks to define 'hard work,'" says Brian Hoffman, a partner at Winter, Wyman & Co., a professional placement firm in Waltham, Mass. "The systems analyst who implements a new software package in a department that is hostile to the program will work much harder than a colleague with identical skills and experience who installs the same program in a department that welcomes its introduction."

Workweek statistics also fail to capture the amount of "personal" time spent on work, and some observers say they feel this is

significant for IS.

"How often do you find yourself resolving a technical or systems implementation issue while showering or supposedly listening to your significant other?" asks L. Paul Ouellette, chief executive officer at Ouellette & Associates, Inc., a Bedford, N.H.-based computer consulting firm.

IS professionals are under the gun, says Richard Wueener, national

director of IS at Robert Half International, Inc. in New York. They are expected to keep up with new developments that will speed work and improve quality, but technologies are changing so quickly that staying abreast of changes can feel like a job in and of itself.

"The only profession analogous to ours in that regard is the medical profession, where doctors are required to be state-of-the-art to do their jobs properly," Wueener says.

If you are feeling the pressure, do not look for any relief soon. One solution to long work weeks proposed by the American Quality and Productivity Center survey respondents was more and better technology.

Vittello is a free-lance writer based in East Brunswick, N.J.



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Truth best approach for job search

Fast Track is a twice-monthly column dedicated to answering questions on career directions. This week's guest adviser is *Brian M. Hoffman, a partner at Winter, Wyman & Co., a professional placement firm with offices in Boston and Waltham, Mass.*

Q I have been out of work for more than two months. Friends have advised me to leave my resume showing that I am still employed; others have told me to show the payroll and the date. What will work best with hiring companies?

A I do not recommend including false information on your resume or cover letter. In fact, if you get an interview based on the fact that you are still employed, it can be a real deal killer when the company learns the truth. My advice is to be truthful and market yourself on your strengths and technical competencies.

Q I work in a traditional IBM Quesadilla, Cobol environment in becoming a creative personal computer professional. I have a 486 machine with OS/2 at home. How can I lead in that direction without giving up my career status and earnings and starting over?

A You may not be able to do what you want without some change in status and earnings. If your interest is strong, you will probably need to consider a lateral or backward move to get your career going in another di-

rection. While considering this option, form alliances with PC professionals in your organization. Ask them questions and get to know what a career in the commercial PC marketplace entails.

Q My company does not have flextime for the information systems staff. How can I interest it in such a program?

FAST TRACK CAREER ADVICE FOR THE '90s

A First, research your regional market to find other IS shops that offer it. Find out what has worked for them and why. Second, enlist your immediate manager's support and assure him that the research will not detract from ongoing projects. Third, contact the human resources staff. They are the experts in this area and can be good advisors.

Q I am a professional woman returning to the IS market after starting my family. I am seeking a senior programmer/analyst role.

A My background includes a four-year degree and more than three years of full-time ex-

perience in programming and analysis. What should I expect in terms of my marketability, and how do I approach employers?

A Your marketability will be closely tied to three things: the length of time you have been away from the workplace; the job level you were at when you left; and how willing you are to consider another level; and the suitability of your expertise for current market needs — for instance, if high tech and manufacturing were hot when you left, you may have a tougher time than if your background was in financial services or bio-tech, which are popular right now.

When approaching companies, use personal and professional contacts. If your former employer has no openings, try to connect with any former colleagues who have moved to a new company.

You will also need to be candid about why you left the work force, the hours you can work and your openness to travel.

BT Burned out? Grappling with work/family issues? Worried about skills stagnation? We want to hear about these and other issues that affect your career. Call your questions in using the **Fast Track** line at (508) 820-8522, or fax them to Kelly E. Sewell at (508) 875-8831. If we use your question, we will send you a gift.

How to deal with know-it-all users

➤ Agree with them, but then do it your way. I never run into a confrontation when I deal with users that way. What I program works, and when they see that, they are content.

*Mary-Ann Farnum, computer specialist
National Institute of Standards and Technology,
Gaithersburg, Md.*

➤ Explain the IS point of view so you have both sides on the table. If they still want to be know-it-alls, then let them be. They are the customer, and the customer is always right.

*Shelley Goodman Brown,
MIS training coordinator
Consolidated Freightways, Inc.,
Portland, Ore.*

➤ Don't disagree or get involved in open conflict. Prepare for encounters with the person, using materials to back up your argument.

*Arthur Pembroke,
Bureau chief of microcomputer applications group
Montana Department of Social and Rehabilitation Services,
Helena, Mont.*

➤ Generally, we try to reason with that person and show them we have expertise in what we do. It makes them feel confident about their job and they won't question us.

*John Purke, project leader
Total System Services, Atlanta*

➤ The user may voice a concern about what is being done, which makes them come off as a know-it-all. I try to find out what the concern is so I can do something about it.

*Allen Wick, software product manager
Eastman Kodak Co., Rochester, N.Y.*

Compiled by Stefanie McCann, assistant researcher.

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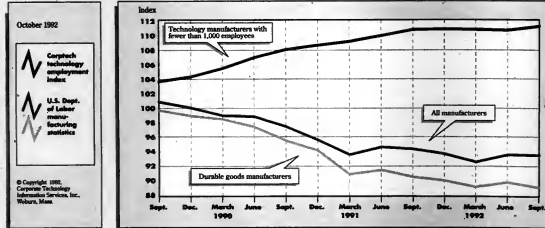
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for medium-scale systems	81,799
for small-scale systems	72,212
for personal computers	66,366
for technical workstations	26,022
Non-CPU Computer Products Manufacturer	34,311
VAR/Dealer/Retailer	44,773
DP Service Bureau/Contract DP Services	52,375
Consulting/Planning	112,149
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Insurance	62,539
Healthcare	57,788
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SOURCE: Shell Survey of Consumers' Attitudes, June 1991

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Stephen J. Kukoy is not only President of National Computer Associates, but also President of Abacus Consultants, Inc. in Denver. Having been in the recruitment business for nearly 15 years, he knows the critical role advertising plays in finding the best qualified professionals. He also knows where his recruitment advertising dollars are best spent.

Founded in 1971, National Computer Associates (NCA) is an exclusive group of private firms dedicated to importing and exporting computer personnel on a national basis. With an active membership of 30 firms throughout the United States, Great Britain, Canada, and Australia, NCA is virtually a network of "branch offices" working together to place the best qualified IS professionals in the right jobs. Today, NCA's aggressive growth and strategic market positioning make recruitment advertising more important than ever.

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qualified professionals who are truly interested in keeping their careers abreast of the industry's rapid changes and trends.

"Looking ahead, we expect several factors to escalate our recruitment advertising needs - the growing demand by clients for greater selectivity, an increasingly specialized industry, a continually mobile marketplace, and NCA's expansion into the lucrative European marketplace. As this all happens, we intend to increase our advertising budget in *Computerworld* proportionately.

"*Computerworld* recruitment advertising has been equally successful for Abacus Consultants. Although we've experienced many such situations, one specific instance comes to mind. After local advertising proved unsuccessful for finding a particularly hard-to-find individual in the Denver area, the client gave us the go-ahead to advertise nationally. We ran one recruitment advertisement in *Computerworld* - and got an instant response from just the candidate we were looking for - right here in our local area. It just goes to show that *Computerworld* delivers far better candidates than any other source.

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MARKETPLACE

When bad VARs happen to good companies



BY STEVEN M. DEYO
CWS/STP

It is not that hard to tell a good value-added reseller (VAR) from a bad one—once you've signed on with one. Too bad it's so hard to distinguish between the two before the sale. Let's face it: You are hiring the company's technical expertise right unseen. What's difficult about choosing a VAR is that there are thousands of them, but only a few do a lot of business.

In 1992, for instance, the entire U.S. VAR population will sell a projected \$7.1 billion in systems, with the average VAR taking in just \$750,000 annually.

With "thousands of VARs doing very little business each,

says Seymour Merrin, president of Merrin Information Systems, Inc. in Palo Alto, Calif., it's imperative that buyers screen out those that are likely to drop the ball or go out of business.

Most buyers agree that you have to look at a reseller's staff size and qualifications with a heavy emphasis on financial stability, references, training and technical support.

Learn from mistakes

Unfortunately, most people learn these guidelines from experience. Janet Mace, information systems director at Anaheim City Hall in Calif., has had her share of bad experiences and is now smarter for it.

"Every [VAR] we deal with prices everything at least three times more than what it should be," she says. When one VAR tried to sell her a \$7,000 system, Mace insisted that the reseller break the bid down by item and price to show what her money was buying.

Armed with this information, Mace was able to save money when she bought the 486 machine somewhere else.

Once bitten, most purchasers make sure they're not around for the second bite. Harvey Soren, IS manager at Bakersfield Vineyards Corp. in Bakersfield, Calif., is very careful about VAR selection,

having watched one VAR go out of business when he was in the middle of a transaction. "We got stuck," he says.

Soren now avoids VARs with lackluster sales or poor cash flow. To distinguish VARs that are

Looking for Mr. Good VAR

When choosing a VAR make sure it:

- Shows financial stability through low inventory and short-term accounts receivable.
- Employs trained, degreed experts, often in specialty fields such as LANs, GIS and so on.
- Answers questions promptly and accurately.
- Doesn't confuse pricing by bundling products or services.
- Offers training a la carte or as part of a project proposal.

trailing financially, he advises purchasers to inquire about the VAR's inventory. "If they stock a lot of inventory," Mace would probably stay away from them," he says.

Another indicator is an abundance of accounts receivable. Customers may be slow in paying because of unresolved disputes or complaints. Even if that's not the case, a VAR can be put out to pasture when customers take their time paying sizable bills, Soren says.

This is a more difficult measure to take, however. "I'd ask if they're on net 10 [days], or net 30 or net 45. If someone does net 30 or more, I won't touch them," Soren says.

Once you've determined that a VAR is in the pink, it's essential to check whether it has a record of satisfied customers by calling a few, preferably those provided by someone other than the VAR, according to Brad Bishop, chairman at Avcom Systems, Inc. in Sunnyvale, Calif.

The systems integrator says he would like to see a Better Business Bureau for resellers and consultants because "in the computer industry, it's everyone for themselves." In the meantime, his best advice is to find a VAR the old-fashioned way: by word of mouth.

You should also get references from a VAR's most established customers, says Joanne Turner, a consultant at SOS, Inc. in Venice, Calif.

Once you've checked out a VAR's finances and references, you need to determine whether the VAR can support you beyond the sale. Anyone can sell you a computer, but "value-added" is two-thirds of a VAR's job title.

"I don't think I'd hire him if he didn't do training," Turner says. "I would also want to know that

there was a certain amount of on-going telephone support bundled into the cost for the first 60 days so I don't have to pay 50 bucks every time I pick up the phone. The good [VARs] have always offered training because it makes them a lot more money on bids as prices come down on margins for equipment."

People power

Soren says a good VAR has enough staff to handle each area of expertise the VAR it claims to support. How much is enough? At least one person for each area of expertise and enough staff to handle the phone traffic from the VAR's customer base.

The final test of a truly good VAR is whether it can save you money. Buyers agree that a good one will, Mace, who is beginning to implement Ultrix at her company, chose a VAR with telecommunications expertise, which, as she says, "saved [us] time, money and was convenient because we're not experts in Ultrix, because it's too new."

Some people take VAR shopping so seriously that they are willing to pay big bucks for an expert to let it go—even up to \$300,000. That's what Mace says she is paying an independent project manager to "keep us from being taken" on an Application System/400 filtration system. For this \$2 million project, Mace considers that to be a bargain.

Deyo is a freelance writer based in St. Paul, Minn., and editor in chief of the Computer User newspaper group.

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Do you have anecdotes about your own, your boss or your pals? Know any industry trends? If so, please contact Larry Ole or Julie Noss at (800) 343-6474. If we use your ideas, we'll send you a gift.



Weird Software Contest

The San Diego Computer Fair's first annual weird software contest ended in a three-way tie for first place.

Winners:

Bananas: A screen saver featuring a bungee-jumping cow whose cord breaks; it plunges to the ground, only to become a pile of ham-burgers and steaks.

Alibis: Helps you determine whether your neighbors are from outer space.

Bathroom: Tells you exactly how long you will spend in the bathroom and doing what.

Honorable mentions:

Crystal Balls: Fortune-telling program.

Portrait: Creates personalized portraits.

Job Resumes

"There were a couple I can recall. One was from a person applying for a technical writer position. The resume said they had a special attention for denial. Another stated that the applicant had been on the winning 400-meter Olympic track team. I looked it up, and it wasn't true!"

Terry Truman, Unidata, Denver

Say goodbye now!

The Federal Communications Commission has ruled that it is OK for business travelers to use their cellular phones while planes are still on the ground, but the instant a plane becomes airborne, it's time to say goodbye or be subject to a fine. The ruling also applies to hot air balloons.

Sources: The Computer Industry Almanac; Businessweek International

OK Chart: Michael Shapiro

The 5th Wave



"LARRY, LISTEN VERY CAREFULLY TO ME—TURN OFF THE...PRINTER!"

INSIDE LINES

Call to arms

► Cisco will officially start the revolution against IBM's Advanced Peer-to-Peer Networking (APPN) this week by announcing the APPN consortium. A bond of 13 vendors (including Cisco) will announce plans to support the APPN protocol. Cisco's would-be alternative to IBM's would-be enterprise inter-networking standard. Cabletron confirmed that it will be one member, a source close to Cisco hinted that HP and DEC will also be members, with Wellfleet a strong possibility.

Objects d'CASE

► Although there has been no official word from IBM on which object-oriented database will get the nod for its new workgroup repository, an IBM source said the field is wide open and that no partner has been chosen as IBM continues talks with a number of competitors. That declaration came despite a recent pronouncement by Versant Object Technology that it is the object-oriented database of choice for IBM's workgroup repository. Time will tell if the Menlo Park, Calif., company is correct.

Singed system

► One source who finally got his hands on a machine sporting Intel's scarier-than-hen's-teeth DX2 chip says that the box is impressive — and hot. Literally. Even with the heat sink on the chip, it radiates a lot of heat. Humm. Maybe the reports that Intel is having trouble reducing heat on its forthcoming P5 chip have some credence after all.

Hoping for a happy Thanksgiving

► Dell had placed a lot of hopes, and some future products, on its 3.5-pound 320SLI notebook. But the production schedule slipped after BIOS problems and some construction issues arose. The company is now telling customers it will be Oct. 20 before they can get a system, though some think it will be well into November before Dell actually produces anything.

Greenback blues?

► Employees at troubled PC maker Everex must take a day off each week without pay — effectively a 20% cut in their salary — and will be expected to take a week off without pay at Thanksgiving and two weeks off without pay at Christmas. Everex isn't seeing much in the way of cash these days, as sources report it has fallen into arrears on its loan covenants with the CIT Group, a New York-based lender of last resort that holds a \$70 million line of credit with Everex. Because of this, Everex distributors are now making payments directly to CIT, the sources said. Everex declined to comment.

Studying on the Go

► Notebooks have been a standard school supply since they replaced their predecessor, "the slate." Now, Columbia University's Graduate School of Business is taking that theme a step further. Beginning in the January semester, the Ivy League grad school will require all students to purchase and use portable notebook computers. So far, 300 students, or 67% of this fall's new class, have plunked down between \$1,560 to \$5,500 for notebooks from Compaq Computer, the supplier selected by the university.

I want my B-T-V!

► Berland's Philippe Kahn may make his MTV debut sometime during Comdex/Fall '92 in November. It seems the saxophone-toting software chief executive officer may be videoed jamming with jazz-man and Jay Leno sidekick Branford Marsalis at a Comdex concert scheduled to include at least one member of The Traveling Wilburys. Another musical celebrity joining the festivities will be Alan Parsons, who worked as a studio engineer with The Beatles before leading his own group. Parsons will help produce a multimedia extravaganza.

Remember, you read it here first: President Bush will not be re-elected. So said Cambridge, Mass.-based City Solutions Institute (CSI) last week, calling it an "insurance policy," not a prediction. The assertion came from an artificial intelligence program that CSI said has been extremely accurate in predicting political races. If only news were so predictable! Phone, fax or CompuServe News Editor Alan Alper with news tips at (800) 343-6474, (508) 875-8931 or 76537.2413, respectively. Or try Computerworld's 24-hour voice-mail tip line at (508) 820-8555.



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